CONTRACT
BID DOCUMENTS

TOWN OF VERNON
Invitation to Bid #1082-03-31-16

Former Amerbelle Mill – Phase 2
104 East Main Street
Vernon, Connecticut

For Bid
March 2016

655 Winding Brook Drive, Suite 402
Glastonbury, Connecticut 06033

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INVITATION TO BID

THE TOWN OF VERNON
FORMER AMERBELLE MILL – PHASE 2
INVITATION TO BID # 1082-03-31-16

Sealed Bids for the **FORMER AMERBELLE MILL – PHASE 2** will be received by the Town of Vernon at the office of the Town Administrator, Memorial Building, 14 Park Place, 3rd Floor, Vernon, CT 06066 until **11:00 a.m.** on Thursday, **March 31, 2016** and at that time and place will be publicly opened and read aloud. No emailed, faxed or late bids received after **11:00 a.m**. will be accepted.

The Work consist(s) of: Complete removal of asbestos containing and hazardous building materials, removal of PCB impacted concrete masonry units, removal of petroleum impacted wood flooring, demolition of existing buildings, raceway top, and an existing dam including separation from buildings and structures to remain, removal of slabs and foundations, processing and re-use of certain building materials, backfilling, compacting, and regrading of portions of the Site, securing and weather proofing buildings not scheduled for demolition, construction of a new reinforced concrete dam structure, transportation and disposal/recycling of generated materials and the performance of Site restoration activities. The project is located at 104 East Main Street and 5 Brooklyn Street, Vernon, Connecticut and is completely described and depicted in the Contract Bid Documents. Complete sets of the Contract Bid Documents may be examined at the Town of Vernon, Office of the Town Administrator, 14 Park Place, Vernon, Connecticut 06066. Copies will be made available at a non-refundable cost of $425 each from Minuteman Press located at 352 Hartford Turnpike, Vernon, Connecticut. An electronic copy of the Contract Bid Documents will also be made available for viewing and/or for download at http://www.vernon-ct.gov/legal-notices, RFP#1082 and at www.DAS.CT.GOV.

Bids must be enclosed in an opaque sealed envelope and plainly marked with the Project Title, **FORMER AMERBELLE MILL – PHASE 2,** Invitation to Bid number, and shall contain the name and address of the Bidder on the envelope. Each Bid shall be submitted in accordance with the Instructions to Bidders and be accompanied by a Bid Security in the amount of **5 percent** of the Total Bid Price.

The Bidder to whom a contract is offered, must furnish to the Town, if that contract has a total cost greater than $50,000.00, a 100 percent Performance and Payment Bond with a surety company acceptable to the Town and in a form acceptable to the Town.

An Affirmative Action Plan must be filed with and approved by the CHRO prior to the commencement of construction. For construction contracts valued over $50,000, the contractor should be required to make good faith efforts to place a minimum of 25% of the subcontracts awarded by the general contractor with eligible contractors holding current certification from the DAS under the provisions of CGS 4a-60g, as amended. (25% of the work with DAS certified Small and Minority owned business and 25% of that work with DAS certified Minority, Women and/or Disabled owned businesses.)

Complete instructions for filing Bids are included in the Instructions to Bidders.

After review of the factors set forth in the Instructions to Bidders, the TOWN reserves the right to reject any and all Bids, to make an award, or to decline to make an award.

A mandatory pre-bid conference will be held at 104 East Main Street, Vernon, Connecticut at 9:00 a.m. on Wednesday, March 16, 2016. Attendance at the pre-bid conference by a representative of each Bidder is mandatory.

This Contract is subject to state set-aside and contract compliance requirements. The Project is subject to Prevailing Wage Rates established by the Connecticut Department of Labor.

Contact Stephen Raymond, GZA at (603) 232-8749 for further information.

END OF SECTION

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

FORMER AMERBELLE MILL – PHASE 2

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in Section 00 70 00 – Standard Conditions and Section 00 73 00 - Supplemental Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. ISSUING OFFICE

1. The office from which the Bidding Documents are to be issued and where the Bidding procedures are to be administered.

2. The Town of Vernon, Office of the Town Administrator is the Issuing Office for the Bidding Documents.

3. The Issuing Office is the Owner responsible for facility administration, regulatory oversight, accounting, purchasing, etc.

B. OWNER

1. The Town of Vernon is referred to as the Owner. On-Site construction activities are monitored for Owner by the Engineer.

C. ENGINEER

1. GZA GeoEnvironmental, Inc. (GZA) is referred to as Engineer. GZA is the Licensed Environmental Professional (LEP) for the project and is responsible for monitoring compliance with the applicable federal, State and local Laws and Regulations including the Connecticut Remediation Standard Regulations (RSRs). Engineer reports to Owner and is responsible for the administration of Drawings and Specifications and Contractor communications. Engineer will communicate directly with Contractor to coordinate activities and will receive information directly from Contractor to be conveyed to Owner.

2. Engineer is responsible for observing and documenting activities on the Site and ensuring conformance with the Drawings and Specifications. Engineer will collect all material certifications from Contractor. Engineer will be responsible for reviewing Contractor Submittals. Engineer has prepared the Drawings and Specifications and is responsible for the interpretation of the Drawings and Specifications. Engineer will review proposed alterations or modifications to the project design as formally requested by the Contractor. Engineer and Owner will decide all questions that arise regarding the interpretation of the Drawings and Specifications.

3. Engineer will conduct perimeter ambient air monitoring throughout on-Site activities. This work will be independent of air monitoring requirements that are the responsibility of Contractor as specified in Section 01 35 29 - Health, Safety, Emergency Response Procedures for Contaminated Sites, Section 01 35 43 –

Environmental Procedures, Section 01 57 13 – Temporary Project Controls, Section 02 41 00 – Demolition, and Section 02 82 00 – Asbestos Remediation. Data collected from the air monitoring program will be used by Owner and Engineer to provide documentation of air quality parameters during the performance of the Work. Owner and Engineer reserve the right to suspend or modify Work at the Site if perimeter air monitoring threshold levels as identified in Section 01 35 43 – Environmental Procedures, Section 01 57 16 –Temporary Project Controls, Section 02 41 00 – Demolition, and Section 02 82 00 – Asbestos Remediation are exceeded. In the event these threshold levels are exceeded, resulting suspensions and/or modifications of Work shall be performed by Contractor at no additional cost to Owner. Engineer is responsible for preparing a final inspection report documenting remediation activities performed in accordance with the requirements of the Drawings and Specifications.

D. CONTRACTOR

1. Contractor is responsible for implementing and ensuring the completion of the Work and documenting the Work performed in accordance with the Contract Documents. Contractor is responsible for procuring all necessary permits, licenses, and authorizations and completing all notifications unless otherwise specified in the Section 00 73 00 – Supplemental Conditions, procuring the services of subcontractors as necessary to complete the Work as needed, and is responsible for the Work of his subcontractors as he is for his own Work. Contractor reports to the Owner, but shall communicate directly with the Engineer.

2. Contractor is subject to requirements of federal, State, and local agencies for implementation of the Work. Details pertaining to jurisdictional requirements governing the Work that are not specifically mentioned in the Contract Documents shall not relieve the Contractor's obligation to be in compliance with applicable requirements.

ARTICLE 2 – COPIES OF CONTRACT BID DOCUMENTS

2.01 Complete sets of the Contract Bid Documents may be examined at the Town of Vernon, Office of the Town Administrator, 14 Park Place, Vernon, Connecticut 06066. Copies will be made available at a non-refundable cost of $425 each at Minuteman Press located at 352 Hartford Turnpike, Vernon, Connecticut. An electronic copy of the bidding documents will also be made available for viewing and/or for download at http://www.vernon-ct.gov/legal-notices, RFP#1082 and at www.DAS.CT.GOV.

2.02 Complete sets of the Contract Bid Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Bid Documents.

2.03 Owner and Engineer, in making copies of the Contract Bid Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 In evaluating the Bids, the Owner will consider the qualifications of only those Bidders whose Bids, among other factors, are in compliance with the requirements set forth in the Contract Bid Documents.

3.02 Bidders shall complete and submit the Bidder Qualification Form included in Section 00 45 13 with his/her Bid.

3.03 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – EXAMINATION OF CONTRACT BID DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 *Subsurface and Physical Conditions*

A. Section 00 73 00 - Supplemental Conditions identify:

1. Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site.

2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. Copies of reports and drawings referenced in Paragraph 4.01.A will be made available on the Town's website at http://www.vernon-ct.gov/legal-notices, RFP #1060. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of Section 00 70 00 - Standard Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

C. Copies of reports and drawings referenced in Paragraph 4.01.A and 4.01.B will also be made available for a non-refundable fee from Minuteman Press located at 352 Hartford Turnpike, Vernon, Connecticut. Copies of these reports and drawings are subject to Minuteman Press reproduction pricing rates.

4.02 *Underground Facilities*

A. Information and data shown or indicated in the Contract Drawings with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.03 *Hazardous Environmental Condition*

A. Section 00 73 00 - Supplemental Conditions identifies any reports and drawings known to Owner relating to a Hazardous Environmental Condition identified at the Site.

B. Copies of reports and drawings referenced in Paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.06 of Section 00 70 00 - Standard Conditions has been identified. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

C. Copies of reports and drawings referenced in Paragraph 4.03.A will be made available for an non-refundable fee from Minuteman Press located at 352 Hartford Turnpike, Vernon, Connecticut. Copies of these reports and drawings are subject to Minuteman Press reproduction pricing rates.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Contract Bid Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 4.02, 4.03, and 4.04 of Section 00 70 00 - Standard Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 4.06 of Section 00 70 00 – Standard Conditions.

4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Contractor Site access deemed necessary for bid submissions shall be solely requested through the Engineer as the Town will not be handling such requests. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

A. Bidders shall coordinate access through Engineer and a minimum of 48 hour notice shall be provided prior to accessing the Site.

B. Site access shall be limited to Monday through Friday between the hours of 7 a.m. to 5 p.m. Eastern Standard Time.

C. Bidders shall be responsible for providing and wearing the minimum personal protective equipment (PPE) outlined in Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites during the Site visit.

4.06 It is the responsibility of each Bidder before submitting a Bid to:

A. Examine and carefully study the Contract Bid Documents, and the other related data identified in the Contract Bid Documents.

B. Visit the Site and familiarize himself/herself with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Familiarize himself/herself with all federal, State, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in Section 00 73 00 - Supplemental Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Section 00 73 00 - Supplemental Conditions as containing reliable "technical data".

E. Consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Bid Documents; and the Site-related reports and drawings identified in the Contract Bid Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Bid Documents; and (3) Bidder's safety precautions and programs.

F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Contract Bid Documents.

G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Bid Documents.

H. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Contract Bid Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder.

I. Determine that the Contract Bid Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.07 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Bid Documents and applying

any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Contract Bid Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Contract Bid Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Contract Bid Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – PRE-BID CONFERENCE

5.01 A mandatory pre-bid conference will be held at **9:00 a.m**. local time on **Wednesday, March 16, 2016 at the Site located at 104 East Main Street, Vernon, CT.** Representatives of Owner and Engineer will be present to discuss the Project. Bidders are **required** to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

5.02 Bidders are required to supply and wear steel toed boots, hard hats, high visibility traffic vests, and safety glasses during the pre-bid conference. Bidders not wearing these items will not be allowed to participate in the Site walkover.

5.03 Bidders are required to supply and utilize flashlights during the Site walkover.

ARTICLE 6 – SITE AND OTHER AREAS

6.01 The Site is identified in the Contract Bid Documents.

6.02 All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor at no additional cost to the Owner.

6.03 The use of any additional lands shall be approved by the Owner prior to access.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Contract Bid Documents are to be submitted to Engineer in writing electronically via email (stephen.raymond@gza.com). Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda emailed to all parties recorded by Engineer as having attended the mandatory pre-bid conference. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Contract Bid Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 – BID SECURITY

8.01 In accordance with Connecticut General Statutes (C.G.S.) 49-41, a Bid must be accompanied by a Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price and in the form of a Bid bond (on the form attached, Section 00 43 13 – Bid Security Form) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of Section 00 70 00 – Standard Conditions.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

ARTICLE 9 – CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages are set forth in Section 00 52 00 – Standard Form of Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Contract Bid Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Contract Bid Documents that a substitute or "or-

equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS AND OTHERS

12.01 If Section 00 73 00 - Supplemental Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, without an increase in the Bid.

12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Article 6.06 of Section 00 70 00 – Standard Conditions.

12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included in Section 00 41 00 of the Contract Bid Documents.

13.02 All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item, alternative, adjustment unit price item, and unit price item listed therein.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

13.08 All names shall be printed in ink below the signatures**.**

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID; COMPARISON OF BIDS

14.01 *Lump Sum*

A. Bidders shall submit a Bid on a lump sum basis for each item of Work listed in the Bid Form.

14.02 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Article 11.03 of Section 07 00 00 – Standard Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14.03 *Completion Time Comparisons*

A. Bid prices will be compared after adjusting for differences in the time designated by Bidders for Substantial Completion. The adjusting amount will be determined at the rate set forth in the Contract Documents for liquidated damages for failing to achieve Substantial Completion for each day after the desired date appearing in Article 9 above.

ARTICLE 15 – SUBMITTAL OF BID

15.01 The Contract Bid Documents include a Bid Form and a Bid Security Form. Bidders shall submit **three** copies of their bids along with an unbound copy of the Bid Form, the Bid Security Form and the following documents and information:

A. Bidder's Qualification Form (Section 00 45 13)

B. CHRO Bidder Contract Compliance Monitoring Report (Attachment F of the Project Manual)

C. Corporate Resolution Form (Section 00 45 42)

D. Name and address of all proposed subcontractors and vendors.

E. Name and address of all proposed disposal and recycling facilities.

F. Name and address of all proposed waste haulers.

G. A preliminary project schedule.

H. A Schedule of Values for each Lump Sum bid item.

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or Section 00 11 16 - Invitation to Bid and shall be enclosed in a plainly marked, sealed package with the Project title, the Invitation to Bid number, the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to John D. Ward, Town Administrator, Town of Vernon, 14 Park Place, Vernon, CT 06066. Emailed, faxed or late bids will not be accepted.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid,

and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

17.01 Bids which meet the standards as outlined in the previous Articles will be opened at the time and place indicated in the Advertisement or Section 00 11 16 - Invitation to Bid and, read aloud publicly. An abstract of the amounts of the base Bids will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in Section 00 73 00 - Supplemental Conditions.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.

19.06 If the Contract is to be awarded, Owner will award the Contract to the Bidder whose Bid is in the best interests of the Project.

ARTICLE 20 – CONTRACT SECURITY AND INSURANCE

20.01 Article 5 of Section 00 70 00 – Standard Conditions, as may be modified by Section 00 73 00 - Supplemental Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds and Certificates of Insurance with the limits specified in Article 17 of Section 00 73 00 - Supplemental Conditions.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22 – SALES AND USE TAXES

22.01 Owner is exempt from Connecticut state sales and use taxes on materials and equipment to be incorporated in the Work. (State ID No. 69-0160138-001 and Federal ID No. 06-6002112). Said taxes shall not be included in the Bid.

ARTICLE 23 – RETAINAGE

23.01 Provisions concerning Contractor's rights to deposit securities in lieu of retainage are set forth in the Agreement.

END OF SECTION

SECTION 00 41 00

BID FORM

ARTICLE 1 - GENERAL

1.01 Bidder accepts all of the terms and conditions of Section 00 21 13 - Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 61 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 2 – BIDDER'S REPRESENTATIONS

2.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all laws and regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in Section 00 73 00 - Supplemental Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Section 00 73 00 - Supplemental Conditions as containing reliable "technical data."

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and

procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.

F. Based on the information and observations referred to in Paragraph 2.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

ARTICLE 3 – BIDDER'S CERTIFICATION

3.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

C. Bidder has not solicited or induced any individual or entity to refrain from bidding.

D. Bidder is in conformance with all federal, State, and local jurisdictional requirements as outlined in Article 13 of Section 00 73 00 – Supplemental Conditions.

E. Bidder is in compliance with Article 14 of Section 00 73 00 – Supplemental Conditions.

F. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 3.01.F:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 4 – BASIS OF BID

4.01 Bidder will complete the work in accordance with the Contract Bid Documents for the following price(s):

Utilize Attached Bid Form Table at the end of Section 00 41 00 – Bid Form

4.02 Unit Prices have been computed in accordance with Paragraph 11.03.B of Section 00 70 00 – Standard Conditions.

4.03 Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 5 – TIME OF COMPLETION

5.01 Bidder agrees that the Work will be substantially complete within **168** calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of Section 00 70 00 – Standard Conditions, and will be completed and ready for final payment in accordance with Paragraph 14.07 of Section 00 70 00 – Standard Conditions within **182** calendar days after the date when the Contract Times commence to run.

5.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 6 – ATTACHMENTS TO THIS BID

6.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security in the form of a Bid bond (Section 00 43 13).

B. Bidder's Qualification Form (Section 00 45 13)

C. CHRO Bidder Contract Compliance Monitoring Report (Attachment F)

D. Corporate Resolution Form (Section 00 45 42)

E. Name and address of all proposed subcontractors and vendors.

F. Name and address of all proposed disposal and recycling facilities.

G. Name and address of all proposed waste haulers.

H. A preliminary project schedule.

I. A Schedule of Values for each Lump Sum bid item.

ARTICLE 7 – DEFINED TERMS

7.01 The terms used in this Bid with initial capital letters have the meanings stated in Section 00 21 13 - Instructions to Bidders, Section 00 70 00 – Standard Conditions, and Section 00 73 00 - Supplemental Conditions.

ARTICLE 8 – BID SUBMITTAL

8.01 This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____
Type (General Business, Professional, Service, Limited Liability):_____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest _____

Date of Qualification to do business in *[State where Project is located]* is ____/____/____.

A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____(SEAL)

By: _____
(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address _____

_____

Phone No. _____ Fax No. _____

E-mail _____ _____

SUBMITTED on _____, 20____.

State Contractor License No. _____. *[If applicable]*

SECTION 00 41 00
BID FORM
FORMER AMERBELLE MILL - PHASE 2
VERNON, CONNECTICUT

Item No.	Estimated Quantity	Unit Bid Prices in Words*	Lump Sum or Unit Price in Figures	Total Price in Figures
1	1 *Lump Sum*	***Performance and Payment Bond***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
2	1 *Lump Sum*	***Work Plans and Submittals***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
3	1 *Lump Sum*	***Mobilization and Site Preparation***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
4	1 *Lump Sum*	***Temporary Facilities and Controls***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
5	1 *Lump Sum*	***Temporary Water Control and Cofferdam***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
6	1 *Lump Sum*	***Asbestos and Hazardous Material Removal and Disposal***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
7	1 *Lump Sum*	***Demolition***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
8	2,500 *Square Feet*	***Weather Proofing Roofs***		
		The Unit Rate of: _____ per Square Foot	per Square foot	$
9	1 *Lump Sum*	***Concrete Dam and Slide Gate***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
10	3,300 *Square Feet*	***In-Filling/Repointing Raceway Walls***		
		The Unit Rate of: _____ per Square Foot	per Square foot	$
11	2,500 *Tons*	***Import and Placement of Free Draining Materials***		
		The Unit Rate of: _____ per Ton	per Ton	$
12	1 *Lump Sum*	***Site Restoration***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
13	1 *Lump Sum*	***Final Clean-up and Demobilization***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
TOTAL BASE BID AMOUNT				$ **TOTAL**

SECTION 00 41 00
BID FORM
FORMER AMERBELLE MILL - PHASE 2
VERNON, CONNECTICUT

Item No.	Estimated Quantity	Unit Bid Prices in Words*	Lump Sum or Unit Price in Figures	Total Price in Figures
Contingency Items				
C1	***Minimum 20 Ton***	***Non-Hazardous Soil Off-Site Transportation and Disposal (Thermal Treatment or Landfill)***		
		The Unit Rate of: _____ per Ton	per Ton	$
C2	***10,000 Gallon***	***Non-Hazardous Liquids Transport and Disposal (minimum 1,000 Gallons)***		
		The Unit Rate of: _____ per Gallon	per Gallon	$
C3	***5,000 Gallon***	***Hazardous Liquids Transport and Disposal (minimum 500 Gallons)***		
		The Unit Rate of: _____ per Gallon	per Gallon	$
C4		***Asbestos Removal and Disposal***		
C4a	***1 Lump Sum***	***Building No. 1***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
C4b	***1 Lump Sum***	***Building No. 3***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
C4c	***1 Lump Sum***	***Building No. 4***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
C4d	***1 Lump Sum***	***Building No. 9***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
C4e	***1 Lump Sum***	***Building No. 11***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$
C4f	***1 Lump Sum***	***Building No. 12***		
		The Lump Sum of:_____ per Lump Sum	per Lump Sum	$

*** Brief Descriptions of Bid Items are provided for bidder convenience only. Refer to Specification Section 01 20 00 for detailed descriptions of each Payment Item.**

PLEASE INDICATE HOW YOU HEARD ABOUT THE INVITATION TO BID:	

SECTION 00 43 13

BID SECURITY FORM

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:
Town of Vernon
14 Park Place
Vernon, Connecticut 06066

BID
Bid Due Date: **11 A.M., March 31, 2016**
Description *(Project Name and Include Location)*:
Former Amerbelle Mill – Phase 2, 104 East Main Street, Vernon, Connecticut

BOND
Bond Number:
Date *(Not earlier than Bid due date)*:
Penal sum _____ $ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

   3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

   3.2 All Bids are rejected by Owner, or

   3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

END OF SECTION

SECTION 00 45 13

BIDDER'S QUALIFICATIONS

Bidders for the **Former Amerbelle Mill – Phase 2** shall meet the following minimum qualifications. Bidders shall be a State of Connecticut licensed Major Contractor consistent with Section 20-341gg of the Connecticut General Statutes and have or engage a subcontractor with a minimum of 3 years of successful asbestos-containing material (ACM) removal and demolition experience.

The undersigned certifies the truth and correctness of statements and all answers to questions made hereinafter.

SUBMITTED TO: **TOWN OF VERNON**

SUBMITTED BY: _____
NAME: _____
BUSINESS NAME: _____
_____
OFFICE ADDRESS: _____
_____
PRINCIPAL OFFICE: _____
BUSINESS TELEPHONE NUMBER: _____
BUSINESS FAX NUMBER: _____
BUSINESS EMAIL ADDRESS: _____

( ) Corporation
( ) Partnership
( ) Individual
( ) Joint Venture
( ) Other_____

(NOTE: Attach separate sheets as required):

1. How many years has your company been in business: _____
2. How many years has your organization been in business under its present name: _____
3. If a Corporation or LLC, answer the following:
   - Date of Incorporation: _____
   - State of Incorporation: _____
   - President/Member: _____
   - Vice Presidents/Members _____
   - _____
   - _____
   - Secretary/Member: _____
   - Treasurer/Member: _____
4. If a Partnership, Individual, Joint Venture or other, answer the following:
   - Date of Incorporation: _____
   - State of Incorporation: _____
   - Officers and Titles _____
   - _____
   - _____
   - _____

5. Provide the information in the spaces provided for three demolition projects that your company has completed that are most similar in scope to the Former Amerbelle Mill – Phase 2 project.

#1 Project Owner: _____
Address: _____
Project Engineer: _____
Project Contact: _____

#2 Project Owner: _____
Address: _____
Project Engineer: _____
Project Contact: _____

#3 Project Owner: _____
Address: _____
Project Engineer: _____
Project Contact: _____

6. Provide the following Information for each of the past three years (2014, 2013, and 2012):

- NAICS# _____
- Experience Modification Rating _____
- TIR (Total Incident Rate): _____
- DART (Days Away Restricted Time): _____
- No. of Lost or Restricted Time Incident: _____

7. Do you have a designated safety officer/manager? Yes ____ No ____
If yes, full-time or part time: Full-Time ____ Part-time ____

Name: _____ Phone Number: _____

8. Do you have a PPE Policy? (e.g., mandatory hard hats, safety glasses, etc.?) Yes ____ No ____

9. List the licenses, certifications, registrations your company or employees have that may be required during the execution of this project:

TYPE OF LICENSE/ REGISTRATION/CERTIFICATION	ISSUING AGENCY

10. List All subcontractors that may be used to work on this Project:

COMPANY NAME	WORK TO BE PERFORMED	LICENSE / REGISTRATIONS HELD

11. Have you or your company ever failed to complete any work awarded to you, or have you ever defaulted on a contract? Yes ____ No ____

If yes, please explain circumstance(s):

12. Disclose any current (within the last 3 years) business, financial, personal or other types of relationships which may pose a conflict of interest with providing services to the Town.

13. List the information for the Contractor's employees who will be responsible for the Project:

NAME:	PERTINENT TRAINING/CERTIFICATION:
Superintendent:	
Foreman:	
Assistant Foreman:	
Other:	

The undersigned certifies the truth and correctness of statements and all answers to questions made herein.

Dated at _____ this _____ day of _____, 2015.

Name of Contractor: _____

By: _____

_____

(Print and sign name of duly authorized principal)

SECTION 00 45 42

CORPORATE RESOLUTIONS

I, _____ hereby certify that I am the duly elected and acting Secretary of _____ Corporation, a corporation organized and existing under the laws of the State of _____, do hereby certify that the following facts are true and were taken from the records of said corporation.

The following resolution was adopted at a meeting of the corporation duly held on the _____day of_____,_____.

"It is hereby resolved that _____is authorized to make, execute and approve, on behalf of this corporation, any and all contracts or amendments thereof".

And I do further certify that the above resolution has not been in any way altered, amended, repealed and is now in full force and effect.

IN WITNESS WHEREOF, I hereunto set my hand and affix the corporate seal of said _____corporation this _____day of _____ , 2016.

_____

Secretary

END OF SECTION

SECTION 00 51 00 - NOTICE OF AWARD

Date: _____

Project: **Former Amerbelle Mill – Phase 2**	
Owner: **Town of Vernon, Connecticut**	Owner's Contract No.:
Contract:	Engineer's Project No.:
Bidder:	
Bidder's Address: *[send Notice of Award Certified Mail, Return Receipt Requested]*	

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for **Former Amerbelle Mill – Phase 2**

The Contract Price of your Contract is _____ Dollars ($_____).

_____ copies of the proposed Contract Documents accompany this Notice of Award.

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner _____ fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the Section 00 21 13 - Instructions to Bidders, Section 00 70 00 – Standard Conditions, and Section 00 73 00 - Supplemental Conditions.
3. Other conditions precedent:

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

Town of Vernon, Connecticut
Owner

By:_____
Authorized Signature

_____
Title

END OF SECTION

SECTION 00 52 00

STANDARD FORM OF AGREEMENT

THIS AGREEMENT is by and between **Town of Vernon, Connecticut** ("Owner") and

_____ ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Removal of asbestos containing and hazardous building materials, demolition of certain buildings and structures, and rendering remaining buildings secure and weather-tight at the former Amerbelle Mill property located at 104 East Main Street and 5 Brooklyn Street in Vernon, Connecticut. Work includes, but is not limited to, mobilization; site preparation; implementation of temporary facilities and controls; asbestos containing and hazardous building material removal; removal of PCB impacted concrete masonry units; removal of petroleum impacted wood decking; demolition of certain buildings; removal of concrete slabs and foundations; processing and re-use of certain building materials; backfilling, compacting, and re-grading of portions of the property; installation of permanent fencing, asphalt curbing, and guardrails; sealing of windows and building openings/penetrations on buildings not scheduled for demolition; patching/repairing portions of roofs on buildings not scheduled for demolition; removing the concrete cover/pad over the existing raceway including removal of the existing concrete dam; construction of a new reinforced concrete dam; transportation and off-site disposal/recycling of asbestos containing materials, hazardous materials and all wastes generated during the work; implementation of health and safety measures; import and placement of loam and hydro-seeding; final site cleaning; and demobilization.

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows: **Former Amerbelle Mill – Phase 2.**

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by **GZA GeoEnvironmental, Inc.** (Engineer), which is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Days to Achieve Substantial Completion and Final Payment*

A. The Work will be substantially completed within **168** calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of Section 00 70 00 – Standard Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of Section 00 70 00 – Standard Conditions within **185** calendar days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of Section 07 00 00 – Standard Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner **$1,200.00** for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner **$300.00** for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to the following table:

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Performance and Payment Bond	Lump Sum	1	$	$
2	Work Plans and Submittals	Lump Sum	1	$	$
3	Mobilization and Site Preparation	Lump Sum	1	$	$
4	Temporary Facilities and Controls	Lump Sum	1	$	$
5	Temporary Water Control and Cofferdam	Lump Sum	1	$	$
6	Asbestos and Hazardous Material Removal and Disposal	Lump Sum	1	$	$
7	Demolition	Lump Sum	1	$	$

8	Weather-Proofing Roofs	Per Square Foot	2,500	$	$
9	Concrete Dam and Slide Gate	Lump Sum	1	$	$
10	Repointing Raceway Walls	Per Square Foot	3,300	$	$
11	Import and Placement of Free Draining Material	Per Ton	2,500	$	$
12	Site Restoration	Lump Sum	1	$	$
13	Final Clean-up and Demobilization	Lump Sum	1	$	$
TOTAL CONTRACT AMOUNT: $					
Contingency Items					
C1	*Non-Hazardous Soil Off-Site Transportation and Disposal (Thermal Treatment or Landfill)*	Per Ton	20	$	$
C2	*Non-Hazardous Liquids Transport and Disposal*	Per Gallon	10,0000	$	$
C3	*Hazardous Liquids Transport and Disposal*	Per Gallon	5,000	$	$
C4	*Asbestos Removal and Disposal*				
C4a	*Building No.1*	Lump Sum	1	$	$
C4b	*Building No. 3*	Lump Sum	1	$	$
C4c	*Building No. 4*	Lump Sum	1	$	$
C4d	*Building No. 9*	Lump Sum	1	$	$

C4e	*Building No. 11*	Lump Sum	1	$	$
C4f	*Building No. 12*	Lump Sum	1	$	$

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in Paragraph 11.03 of Section 00 70 00 – Standard Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 9.07 of Section 00 70 00 – Standard Conditions.

For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 14 of Section 00 70 00 - Standard Conditions. Applications for Payment will be reviewed and approved by Engineer as provided in Section 00 70 00 - Standard Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the **20th** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. Applications for payment that are approved by the Owner and Engineer shall be paid in full within **30 calendar days of receipt and verification of accuracy**. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of Section 00 70 00 - Standard Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in Section 00 70 00 - Standard Condition.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of Section 00 70 00 - Standard Conditions.

a. **90%** percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

b. **90%** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **100%** percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of Section 00 70 00 - Standard Conditions and less **200%** percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of Section 00 70 00 - Standard Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

ARTICLE 7 – INTEREST

7.01 All moneys not paid when due as provided in Article 14 of Section 00 70 00 - Standard Conditions shall bear interest at the maximum rate allowed by law at the place of the Project.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, State, and local laws and regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Section 00 73 00 - Supplemental Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Section 00 73 00 - Supplemental Conditions as containing reliable "technical data."

E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Bid Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.

F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement.
2. Performance bond.
3. Payment bond.
4. Release of Waiver of Lien Form.
5. Certificate of Substantial Completion of Work.
6. Certificate of Final Completion of Work.
7. Section 00 70 00 – Standard Conditions.
8. Section 00 73 00 - Supplemental Conditions.
9. Specifications as listed in the table of contents of the Contract Bid Documents.
10. Drawings consisting of Figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11.
11. Tables consisting of Tables 1, 1A, 2 and 3.
12. Addenda.
13. Exhibits to this Agreement (enumerated as follows):
    a. Contractor’s Bid.
    b. Documentation submitted by Contractor prior to Notice of Award.

14. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

a. Notice to Proceed.

b. Work Change Directives.

c. Change Orders.

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of Section 00 70 00 - Standard Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings stated in Section 00 70 00 - Standard Conditions and Section 00 73 00 - Supplemental Conditions.

10.02 *Assignment of Contract*

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any law or regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

OWNER:	CONTRACTOR
Town of Vernon, CT	_____
By: _____	By: _____
Title: _____	Title: _____
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
Title: _____	Title: _____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____
	License No.: _____
	(Where applicable)

NOTICE TO PROCEED

Date: _____

Project: **Former Amerbelle Mill – Phase 2**

Owner: **Town of Vernon, Connecticut**	Owner's Contract No.:
Contract:	Engineer's Project No.:

Contractor:

Contractor's Address: [send Certified Mail, Return Receipt Requested]

You are notified that the Contract Times under the above Contract will commence to run on_____. On or before that date, you are to start performing your obligations under the Contract Documents.

In accordance with Article 4 of the Agreement, the date of Substantial Completion is_____, and the date of readiness for final payment is _____ [(or) the number of days to achieve Substantial Completion is__168_____, and the number of days to achieve readiness for final payment is___184____].

Before you may start any Work at the Site, Paragraph 2.01.B of Section 00 70 00 – Standard Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds and loss payees) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must:

_____

Town of Vernon, Connecticut
Owner

Given by:
Authorized Signature

Title

Date

END OF SECTION

PAYMENT BOND

KNOW ALL MEN/WOMEN BY THESE PRESENT THAT:

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

Town of Vernon, Connecticut
(Name of Owner)

14 Park Place, Vernon, Connecticut 06066
(Address of Owner)

hereinafter called OWNER, in the penal sum of _____Dollars,
($ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

_____

_____

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK and all insurance premiums on said WORK, and for all labor performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in **seven** (7) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

_____
Principal

_____ By: _____ (s)
(Principal Secretary)

Address: _____

_____

(Seal)

_____
Witness as to Principal

_____
Address

_____

_____
Surety

ATTEST: By: _____
Attorney-in-Fact

_____ Address: _____
Witness as to Surety

_____

_____

_____

_____
Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list as amended and be authorized to transact business in the State where the PROJECT is located.

PERFORMANCE BOND

KNOW ALL MEN/WOMEN BY THESE PRESENTS THAT:

_____

(Name of Contractor)

_____

(Address of Contractor)

a _____ , hereinafter called Principal,
(Corporation, Partnership or Individual)

and _____

(Name of Surety)

_____

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

Town of Vernon, Connecticut

(Name of Owner)

14 Park Place, Vernon, Connecticut 06066

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____Dollars, ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

_____

_____

NOW, THEREFORE, if the principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in seven (7) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

_____
Principal

_____ By: _____ (s)
(Principal Secretary)

Address: _____

(Seal) _____

_____
Witness as to Principal

_____
Address

_____
Surety

ATTEST: By: _____
Attorney-in-Fact

_____ Address: _____
Witness as to Surety

_____

_____

_____

_____
Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list as amended and be authorized to transact business in the State where the PROJECT is located.

RELEASE AND WAIVER OF LIEN FORM

1. At preconstruction meeting the OWNER will receive from the CONTRACTOR a list of all major items (s) he intends to subcontract.

2. Prior to the first requisition for payment, the OWNER will inform the CONTRACTOR as to which of these subcontractors or vendors may be required to complete a Release and Waiver of Lien Form.

3. The CONTRACTOR shall include in the payment package a Release and Waiver of Lien Form for the over-all CONTRACT and those of any subcontractors or vendors so identified by the OWNER.

4. For all interim payments prior to 90% completion of the CONTRACT, the CONTRACTOR may delete, "the undersigned does ..... performed or furnished" from the first statement.

5. Final payment requires a fully executed form.

GENERAL CONTRACTOR'S OR SUBCONTRACTOR'S RELEASE AND WAIVER OF LIEN

For and in consideration of the receipt of $_____, in payment for labor and/or materials furnished, the undersigned does hereby waive, release and relinquish any and all claims, demands and rights of lien for all work, labor, materials, machinery or other goods, equipment or services done, performed or furnished for the construction located at the site hereinafter described, to wit:

Former Amerbelle Mill – Phase 2

(Project Name and Owner)

Town of Vernon, 14 Park Place, Connecticut as of _____

(Date)

The undersigned further warrants and represents that any and all valid labor and/or materials and equipment bills, now due and payable on the property herein above described in behalf of the undersigned, have been paid in full to date of this waiver, or will be paid from these funds.

$ _____ Total Paid to Date This Contract

$ _____ Current Payment Due

$ _____ Total Billed to Date This Contract

_____ Contractor/Sub-Contractor

_____ Witness Signature

By: _____

_____ Witness Printed Name

Title: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner's Project No. _____ Engineer's Project No. _____

Project **Former Amerbelle Mill – Phase 2**

Contractor _____ Contract Date _____

Contract For _____

Project or Specified Part Shall Include:

DEFINITION OF SUBSTANTIAL COMPLETION

The date of Substantial Completion of a Project or specified part of a Project is the date when the construction is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part of the Project can be utilized for the purpose for which it was intended.

To: Town of Vernon, Connecticut
(Owner)

And To: _____
(Contractor)

Date of Substantial Completion: _____

The WORK performed under this CONTRACT has been inspected by authorized representatives of the OWNER, CONTRACTOR, and ENGINEER, and the Project is hereby declared to be substantially completed on the above date.

If a tentative list of items to be completed or corrected is appended hereto, the failure to include an item on it does not alter the responsibility of the CONTRACTOR to complete all the WORK in accordance with the CONTRACT DOCUMENTS and CONTRACT TIME.

Recommended By:

ENGINEER	AUTHORIZED REPRESENTATIVE	DATE

Approved By:

OWNER	AUTHORIZED REPRESENTATIVE	DATE

The Contractor accepts the above Certificate of Substantial Completion.

CONTRACTOR	AUTHORIZED REPRESENTATIVE	DATE

EXCEPTIONS AS TO GUARANTEES AND WARRANTIES:

ATTACHMENTS:
1) Punch List Dated: _____

CERTIFICATE OF FINAL COMPLETION OF WORK

CONTRACT NO. _____ AGREEMENT DATE: _____

CONTRACT DESCRIPTION: **Former Amerbelle Mill – Phase 2**

COMPLETION DATE PER AGREEMENT AND CHANGE ORDERS: _____

FINAL CERTIFICATION OF CONTRACTOR

I hereby certify that the WORK as identified in the Final Estimate of Payment for construction CONTRACT WORK dated _____, represents full compensation for the actual value of WORK completed. All WORK completed conforms to the terms of the AGREEMENT and authorized changes.

_____
DATE

CONTRACTOR _____

Signature _____

Title _____

FINAL CERTIFICATION OF ENGINEER

I have reviewed the CONTRACTOR'S Final Payment Request dated _____ and hereby certify that to the best of my knowledge, the cost of the WORK identified on the Final Estimate represents full compensation for the actual value of WORK completed and that the WORK has been completed in accordance with the terms of the AGREEMENT and authorized changes. This certification is provided in accord with the terms of Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions.

ENGINEER _____

DATE

Signature _____

Title _____

FINAL ACCEPTANCE OF OWNER

I, as representative of the OWNER, accept the above Final Certifications and authorize Final Payment in the amount of $ _____ and direct the CONTRACTOR'S attention to Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions. The guaranty for all WORK completed subsequent to the date of SUBSTANTIAL COMPLETION, expires one (1) year from the date of this Final Acceptance.

_____
OWNER

_____
AUTHORIZED REPRESENTATIVE

_____
DATE

CHANGE ORDER # _____

PROJECT TITLE: **Former Amerbelle Mill – Phase 2**

PROJECT NO.: _____ CONTRACT NO. _____ CONTRACT DATE: _____

CONTRACTOR: _____

The following changes are hereby made to the Contract Documents:

1.

_____

Change Order Total:

Justification:

CHANGE TO CONTRACT PRICE:

Original Contract Price: _____

Current Contract Price, as adjusted by previous Change Orders: _____

The Contract Price due to this Change Order will [increase] [decrease] by: _____

The new Contract Price due to this Change Order: _____

CHANGE TO CONTRACT TIME:

The Contract Time will be [increase] [decrease] _____ calendar days.

The date for completion of all work under the contract will be _____

Approvals Required:

To be effective, this order must be approved by the Owner if it changes the scope or objective of the project, or as may otherwise be required under the Supplementary General Conditions of the Contract.

Engineer: _____ date _____

Contractor: _____ date _____

Owner: _____ date _____

SECTION 00 70 00

STANDARD CONDITIONS

SECTION 00 70 00
STANDARD CONDITIONS

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form (Section 00 41 00) setting forth the prices for the Work to be performed.

6. *Bidder*—The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*—The Advertisement or Invitation to Bid (Section 00 11 16), Instructions to Bidders (Section 00 21 13), Bid security of acceptable form (Section 00 43 13), if any, and the Bid Form (Section 00 41 00) with any supplements.

9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop

Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*—See Paragraph 11.01 for definition.

17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*—The individual or entity named as such in the Agreement.

20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

22. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

25. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

26. *Notice of Award*—The written notice (Section 00 51 00) by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

27. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

28. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

29. *PCBs*—Polychlorinated biphenyls.

30. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

32. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

33. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

34. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

35. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.

36. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

37. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

38. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

39. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

40. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

41. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

42. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.

45. *Supplemental Conditions*—That part of the Contract Documents (Section 00 73 00) which amends or supplements these Standard Conditions.

46. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.

47. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

48. *Unit Price Work*—Work to be paid for on the basis of unit prices.

49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

50. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents; or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in Section 00 73 00 - Supplemental Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor one printed hard copy of the Drawings and Contract Bid Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a Schedule of Submittals; and

3. a Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work*: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work*: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable

Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Unless otherwise stated in Section 00 73 00 - Supplemental Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* Section 00 73 00 - Supplemental Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in Section 00 73 00 - Supplemental Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

    a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

    b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

    a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

    b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

    c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in Section 00 73 00 - Supplemental Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

    a. reviewing and checking all such information and data;

b. locating all Underground Facilities shown or indicated in the Contract Documents;

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Section 00 73 00 - Supplemental Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in Section 00 73 00 - Supplemental Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a

result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, the Engineer, the State of Connecticut, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance and Payment Bonds*

A. In accordance with Article 15 of Section 00 73 00 – Supplemental Conditions, Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in Section 00 73 00 - Supplemental Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in Section 00 73 00 - Supplemental Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in Section 00 73 00 - Supplemental Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor’s obligation to maintain such insurance.

D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor’s Insurance*

A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor’s performance of the Work and Contractor’s other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

   b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in Section 00 73 00 - Supplemental Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in Section 00 73 00 - Supplemental Conditions;

3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in Section 00 73 00 - Supplemental Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

4. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

5. include completed operations coverage:

   a. Such insurance shall remain in effect for two years after final payment.

   b. Contractor shall furnish Owner and each other additional insured identified in Section 00 73 00 - Supplemental Conditions, to whom a certificate of insurance has been issued,

evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in Section 00 73 00 - Supplemental Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in Section 00 73 00 - Supplemental Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Section 00 73 00 - Supplemental Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;

2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by Section 00 73 00 - Supplemental Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in Section 00 73 00 - Supplemental Conditions, and the officers, directors, members, partners, employees, agents, consultants and

subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in Section 00 73 00 - Supplemental Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in Section 00 73 00 – Supplemental Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in Section 00 73 00 - Supplemental Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and

3) it has a proven record of performance and availability of responsive service.

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,

b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services; and

4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. *Engineer's Cost Reimbursement*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If Section 00 73 00 - Supplemental Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with Section 00 73 00 - Supplemental Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable

replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in Section 00 73 00 - Supplemental Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a

particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Engineer, and State of Connecticut, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in Section 00 73 00 - Supplemental Conditions, Contractor shall obtain and pay for all Federal, State, and local permits and licenses necessary to complete the Work. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

B. Owner is exempt from Connecticut state sales and use taxes on materials and equipment to be incorporated in the Work. (State ID No. 69-0160138-001 and Federal ID No. 06-6002112).

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Engineer, State of Connecticut, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. Contractor shall comply with the applicable requirements of Owner's safety programs.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts

any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and

approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Engineer, State of Connecticut, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner, Engineer, State of Connecticut or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and

other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. Owner intends to contract with others for the performance of other work on the Project at the Site.

B. The Owner and/or Engineer will have authority and responsibility for coordination of the activities among the various contractors.

C. The specific matter to be covered by such authority and responsibility include:

1. Utility disconnects

2. Former Amerbelle Mill - Phase 1 activities including interior hazardous material removal and asbestos containing material removal.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.

C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these Standard Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. The Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in Article 9 and limitations on the responsibilities thereof will be as provided in Paragraph 9.09.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or

Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required*: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after

the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action*: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part;

2. approve the Claim; or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such

employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

    c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

    d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a

Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:*

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment

is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such

inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the

benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the

Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

1. At least 5 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications:*

1. Engineer will, within 5 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

    a. the Work has progressed to the point indicated;

    b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and

    c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

    a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

    b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

    a. to supervise, direct, or control the Work, or

    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

    d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

    e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise

or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

1. After presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor in accordance with the Agreement.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable

part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

   b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due:*

1. After the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor in accordance with the Agreement.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's repeated disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. agrees with the other party to submit the Claim to another dispute resolution process; or

2. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

END OF SECTION

SECTION 00 73 00

SUPPLEMENTAL CONDITIONS

SECTION 00 73 00
SUPPLEMENTAL CONDITIONS
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ARTICLE 1 – SPECIAL NOTE

These Supplemental Conditions amend or supplement Section 00 70 00 - Standard Conditions and other provisions of the Contract Bid Documents and shall be subject to all requirements of the Agreement. The terms used in these Supplemental Conditions which are defined in the Agreement or Section 00 70 00 - Standard Conditions have the meanings assigned to them in said documents. All provisions of Section 00 70 00 - Standard Conditions which are not so amended or supplemented remain in full force and effect.

This section applies equally and specifically to all Contractors and Subcontractors supplying labor and/or equipment and/or materials for this Project, specifications and general provisions of the Agreement including Section 00 70 00 - Standard Conditions, apply to these Supplemental Conditions. Where items of the Contract Bid Documents or Section 00 70 00 - Standard Conditions are repeated, it is intended to call particular attention to or qualify them; it is not intended that any other parts of the Contract Bid Documents or Section 00 70 00 - Standard Conditions shall be assumed to be omitted if not repeated herein.

Unless expressly provided for otherwise, the costs associated with all work under the Supplemental Conditions shall be included in Contractor's Total Bid Price.

ARTICLE 2 – PRELIMINARY MATTERS

A. Contractors are required to comply with all federal, State and local environmental regulations and all other applicable laws, ordinances, and regulations, and Project specific permits.

B. Fugitive Dust & Odor Management - Contractor is responsible to take preventive measures to prevent fugitive dust emissions and/or a condition of air pollution including, but not limited to, malodorous conditions.

C. Noise Control - Contractor is responsible to take preventive measures with the operation of their or Subcontractor's equipment to prevent nuisance noise.

D. Volatile Organic Compounds (VOCs) - All coatings, paints, and thinners used by the Contractor shall comply with the VOC requirements of the applicable air quality regulations. VOC monitoring is not required, unless otherwise specified.

E. Other activities including, but not limited to, completion of Phase 1 interior asbestos and hazardous building material removal activities may be on-going during the performance of the Work. Contractor shall be responsible for coordinating and working harmoniously with other contractors working on the Site on behalf of the Owner.

ARTICLE 3 – LAND

A. Contractor shall prevent damage to land resources at the Site.

B. Excavations - Contractors shall inform the Owner and Engineer prior to the excavation of any soil on the Owner's property. Soil excavation includes activities such as boring, trenching, digging, grading or installation of groundwater monitoring well(s).

C. Excavation in Known Contamination - All Contractors who intend to perform soil excavation activities or collect soil or groundwater samples at an Owner facility with known contamination shall comply with all applicable OSHA regulations and provide the following:

1. Contractor must provide Owner with a copy of the written Site-specific work plan for all work being conducted within designated contaminated areas.
2. Contractor must provide Owner with a copy of the written site-specific Health and Safety Plan for their scope of work upon request.

D. Contractors who perform excavation activities on Owner's property not designated as a contaminated area must immediately cease excavation activities and notify the Owner and the Engineer whenever the following occurs:

1. Visual observation or odor of Oil or Hazardous Materials (OHM) in the soil, or analytical test results that indicate the presence of OHM in the soil.
2. Visual Observation of improper solid waste disposal.
3. Visual observation or odor of OHM in the groundwater, or analytical test results that indicate the presence of OHM in the groundwater.

E. Discovery of Historical Artifacts - Contractors who perform excavation activities must immediately cease excavation activities and notify the Owner and the Engineer in the event that potentially significant historical artifacts are uncovered.

F. Excavated Soil Management - All soil must be stored in a secure manner (within a fenced and locked location) to prevent exposure to humans and the environment. No soil may be stored in a manner where sensitive human health receptors, such as public and private water supply wells, or sensitive environmental receptors, such as wetlands, surface water bodies or marine environments, may be impacted.

ARTICLE 4 – WATER/WETLANDS

A. All water/wetland resources shall be protected during the Work, including protection from construction debris (including asphalt, concrete, brick, trash, and soil), the leaching of chemical pollutants, and work site erosion.

B. Chemicals, fuels, oils, greases, bituminous materials, solids and concrete shall be stored and handled to prevent leaching or surface run-off into public waters

C. Site run-off shall be controlled with hay bales, silt fences, berms, and settling basins, as directed by the Owner or Engineer.

D. All dewatering operations shall conform to State and local permitting requirements.

E. The Contractor shall comply with all pertinent Permits, Licenses, Certificates, Orders and other regulatory approvals associated with the project. The Engineer or designee will assist the

Contractor, as requested, in interpreting the Project's environmental requirements after which it becomes the Contractor's responsibility for full compliance.

ARTICLE 5 – MATERIAL IDENTIFICATION, STORAGE AND MANAGEMENT

A. Prior to mobilization, the Contractor shall provide Safety Data Sheets (SDSs) for each material to be used during the project. All chemicals must be pre-approved for use by the Owner. The Contractor shall also provide the Owner with a list of anticipated waste types and quantities requiring disposal.

B. The Owner reserves the right to deny the use of a chemical if, in the opinion of the Owner, it may pose a threat to the health and safety of the Owner's employees and/or to the environment. If the Owner deems a product unsafe, the Contractor shall remove the product from the work site immediately.

C. Products shall be stored in the original labeled containers at the work site and stored in a manner consistent with label directions and all applicable regulatory requirements to provide protection from accidental releases to the environment, fire or explosion. Use of cargo containers and/or bulk storage trailers must meet the approval of the Engineer. Storage locations may be limited due to site-specific requirements or procedures and as a result, the User, in conjunction with the Engineer shall be consulted prior to locating storage trailers or cargo containers. At a minimum, all storage trailers or cargo containers shall be labeled on all accessible sides with an appropriate NFPA 704M hazard identification diamond, appropriate DOT markings or other hazard communication markings as required, emergency contact phone numbers and an identification number if more than one trailer or cargo container is used.

ARTICLE 6 – TRANSPORTATION OF WASTE

A. Only qualified hazardous waste transporters may transport hazardous waste from the Site. All haulers of hazardous building materials and hazardous waste must have a MCS-90 endorsement. All waste labeling, packaging and transport shall be completed by the Contractor in accordance with all applicable federal, State and local regulations and the Owner's policies as set forth below. All waste labeling, packaging and transport documentation is subject to inspection and review by the Owner or Engineer prior to removal from the work site.

B. Contractor is forbidden to transport or bring any hazardous waste that has been generated, released or encountered at off-site locations to the work site for any reason.

C. The transport of hazardous waste and PCBs may be prohibited on certain roads. It is the Contractor's sole responsibility to identify and prohibit travel of these wastes on said roads. The scope of work may require the development of a site-specific transportation plan due to potential public impacts of local area roadways. If required, a satisfactory plan shall be developed and coordinated with Public & Community Relations Departments.

D. Bidders shall provide a name, address, and contact information for all proposed waste haulers with his/her Bids.

ARTICLE 7 – DISPOSAL

A. Unless otherwise stated, the Contractor will characterize all work-related wastes to ensure proper on-site management and shall arrange for disposal in accordance with federal, State and local regulations. The Owner shall be identified as the generator of the waste, unless the Engineer determines otherwise. The Owner will supply the appropriate permanent or temporary EPA ID Number, address, and telephone number. All hazardous waste manifests shall be reviewed and signed by the Owner or Owner's Agent.

B. There shall be no on-site disposal of wastes unless specified by the Owner elsewhere in the Agreement or in the Contract Documents.

C. All wastes shall be disposed of at an Owner approved waste disposal/recycling facility.

D. Contractor shall provide copies of all hazardous waste manifests, non-hazardous waste manifests, bills of lading, and/or certificates of disposal/recycling, as appropriate to the Owner immediately upon receipt by the Contractor.

E. All unused chemical (non-waste) products originally brought to the property by the Contractor shall remain the responsibility of the Contractor and shall be removed by the Contractor at the conclusion of the Contractor's on-site activities.

F. Bidders shall provide a name, address, and contact information for all proposed disposal and recycling facilities with his/her Bids.

ARTICLE 8 – TRAINING

A. All Contractor employees and subcontractors who handle, transport or in any way manage hazardous wastes, substances or PCBs, or participate in the cleanup of hazardous substance releases are required to be trained in accordance with federal, State and local hazardous waste and OSHA requirements.

B. Contractor shall provide copies of all training certificates for his employees and subcontractors to the Engineer prior to the start of the Work.

ARTICLE 9 – SPILL PREVENTION

A. The Contractor shall conduct all activities in a manner that will prevent a release to the environment. Spill prevention measures, including maintaining spill control materials at the job site, shall be required based on the types, quantities, and locations of material stored. Documented inspections of storage areas by the Contractor may also be required.

ARTICLE 10 – RELEASE RESPONSE AND NOTI ICATION REQUIREMENTS

A. The Contractor shall immediately notify the Owner and Engineer of any release of any quantity of oil or hazardous material.

B. For releases of Contractor material, the Contractor is responsible to make all required notifications to regulatory agencies and to ensure that the release is properly responded to. The Contractor is responsible for hiring subcontractors for the cleanup of releases. The Contractor may request assistance from the Owner in determining whether notifications are required and for guidance in response actions. If the Contractor does not respond appropriately, the Owner reserves the right to assume response actions and recover costs incurred from the Contractor.

C. No response actions other than those necessary to remove personnel from the vicinity of the release and/or stop/minimize the release of the hazardous substance/waste shall be initiated until all necessary safety precautions have been taken, including, but not limited to, securing the work site and donning of personal protective gear. The Contractor shall attempt to contain the spill using absorbent material or other available materials when possible to do so in a safe manner. Measures shall be taken to prevent the material from discharging to soil, drains, or waterways.

D. When a release occurs, the Contractor shall document all release response actions in writing. The Contractor may be requested to submit this information to the Owner within one working day after a release has occurred. However, verbal notification must be given to the Owner and the Engineer immediately after a release has occurred.

E. The Contractor may also be requested to supply the Owner with a copy of all other documentation required by regulatory agencies related to the release, including documentation of soil, water and solid surface clearance samples within five (5) days of receipt by the Contractor.

F. Spill cleanup debris, discarded protective equipment and other waste resulting from a release and cleanup by the Contractor shall be packaged and disposed of in accordance with all Department of Transportation requirements, and all federal, State and local hazardous waste regulations by the Contractor.

ARTICLE 11 – WAGE RATES

A. The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein, contracted to be done shall be at a rate equal to the Prevailing Wage Rates provided by the Connecticut Department of Labor included in Attachment C. The amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund (as defined in Section 31-78 of the Connecticut General Statutes) shall also be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the Town of Vernon. If the Contractor is not obligated by agreement to make such payment or contribution on behalf of such employees to any such welfare fund, the Contractor shall pay to each employee the amount of payment of contribution for his classification on each payday as part of his wages.

B. The Contractor shall furnish to the Engineer certified copies of payrolls showing the names of its employees working on the Project, the specific days and hours and number of hours that each of them has spent in doing so, and the amount paid to each person for said work.

ARTICLE 12 – SCHEDULE AND POSTING OF MINIMUM WAGE RATES

A. Where applicable, the Contractor, and every Subcontractor, shall post a legible copy of the Minimum Wage Rates and Classifications included in the Contract Documents. This posting shall be in a prominent and accessible place at the site of the work. The schedule shall show all determined minimum wage rates for the various classes of laborers and mechanics to be engaged to work on the project. The schedule shall also show all deductions, if any, required by law to be made from wages actually earned by the laborers and mechanics so engaged.

B. The rates established by each schedule are the minimum and all employees shall be paid no less than the established rate for each trade or occupation. In the case of a conflict between schedules in anyone trade or occupation, the higher rate listed shall control and such higher rate shall be considered to be the minimum.

C. Where applicable, the minimum rates of wages and schedule of supplements to be provided for the various trades shall be in accordance with the Prevailing Wage rate Schedule included herein (Attachment C). The rate of wages and schedule of supplements for any trade not appearing or mentioned in this schedule shall be in accordance with the prevailing rates established for that particular trade by the Connecticut Department of Labor. Minimum wages required to be paid shall include supplements for hospital, surgical, medical or other benefits as determined by Sections 31-53 and 32-54 of the General Statutes of the State of Connecticut. The Contractor shall file a Wage Certification Form with the Labor Department of the State of Connecticut prior to beginning work on the site.

D. If for any reason and at any time, the Federal Government, the State of Connecticut, or the Town of Vernon, shall in any way supplement, change or amend the Prevailing Wage Rates Schedule, then the Contractor or subcontractor shall follow such Schedule as supplemented, changed or amended. In no case shall the Contractor or subcontractor be entitled to any additions, compensations or extras because of any supplement, change, amendment or predetermination of the Prevailing Wage Rate Schedule.

ARTICLE 13 – CONFORMANCE WITH FEDERAL, STATE AND OTHER JURISDICTIONAL REQUIREMENTS

A. By executing this Contract, Contractor represents and warrants that, at all pertinent and relevant times to the Contract, it has been, is and will continue to be in full compliance with all applicable statutes, acts, ordinances, guidelines, resolutions, orders, judgments, decrees, injunctions, rules, and regulations of all government authorities applicable to performance by the Contractor of services hereunder, including those having jurisdiction over its registration and licensing to perform services hereunder; including, but not limited to, the following: EQUAL EMPLOYMENT OPPORTUNUTY; COPELAND ANTI-KICKBACK ACT, as supplemented in the Department of Labor Regulations (29 CFR, Part 3) and Section 12-430(7) of the State of Connecticut General Statutes. All applicable sections of the Town Charter and Code of Ordinances are incorporated by reference made a part hereof.

B. **Taxes-Federal, State and Local.** The Town is exempt from Federal Excise and Transportation, State and Local Sales and Use Taxes, including without limitation, taxes that

would otherwise be imposed upon the Contractor for transactions required or necessitated hereunder between it and its subcontractors, suppliers, etc. The Contractor remains liable, however, for any applicable tax obligations it incurs. Moreover, the Contractor represents that the bid and pricing contained in this Contract do not include the amount payable for said taxes.

C. **Labor and Wages-Federal and State.** Contractor and its subcontractors shall conform to Federal and State of Connecticut labor laws, and all other laws, ordinances, and legal requirements affecting the work in Connecticut.

1. The Contractor is aware of, and shall comply with, the provisions of Title 31, §53 of the Connecticut General Statutes, latest revision (the "Act"), concerning the payment of minimum wages for work on public facilities. The provisions of the Act are hereby incorporated by reference and made a part of this Contract. The Act provides that the Connecticut prevailing wage law applies to certain remodeling, refurbishing, alteration, repair and new construction. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statute 31-53(i), shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

D. **Compliance with CONN. GEN. STAT. § 4a-60g, as amended by June 2015 Special Session Public Act 15-5.**

1. Definitions – For purposes of this paragraph:

i. "Small contractor" means any contractor, subcontractor, manufacturer, Service Company or nonprofit corporation (A) that maintains its principal place of business in the State, (B) that had gross revenues not exceeding fifteen million dollars in the most recently completed fiscal year prior to such application, and (C) that is independent. "Small contractor" does not include any person who is affiliated with another person if both persons considered together have a gross revenue exceeding fifteen million dollars.

ii. "Minority business enterprise" means any small contractor (A) fifty-one per cent or more of the capital stock, if any, or assets of which are owned by a person or persons who (i) exercise operational authority over the daily affairs of the enterprise, (ii) have the power to direct the management and policies and receive the beneficial interest of the enterprise, (iii) possess managerial and technical competence and experience directly related to the principal business activities of the enterprise, and (iv) are members of a minority, as such term is defined in subsection (a) of section 32-9n, or are individuals with a disability, or (B) which is a nonprofit corporation in which fifty-one

per cent or more of the persons who (i) exercise operational authority over the enterprise, (ii) possess managerial and technical competence and experience directly related to the principal business activities of the enterprise, (iii) have the power to direct the management and policies of the enterprise, and (iv) are members of a minority, as defined in this subsection, or are individuals with a disability.

iii. "Municipal public works contract" means that portion of an agreement entered into on or after October 1, 2015, between any individual, firm or corporation and a municipality for the construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees but excluding any project of an alliance district, as defined in Section 10-262u, as amended by this act, financed by state funding in an amount equal to fifty thousand dollars or less.

2. The Contractor and Subcontractor shall comply with the specific requirements of the State of Connecticut Set Aside Program, Connecticut General Statute § 4a-60g, as amended by June 2015 Special Session Public Act 15-5, if the municipal public works contact awarded to the Contactor is funded in whole or in part by state funds.

3. For construction contracts valued over $50,000, Contractor should be required to make good faith efforts to place a minimum of 25% of the subcontracts awarded by the general contractor with eligible contractors holding current certification from the DAS under the provisions of CGS 4a-60g, as amended. Twenty five percent (25%) of the work with DAS certified Small and Minority owned business and 25% of that work with DAS certified Minority, Women and/or Disabled owned businesses.

ARTICLE 14 – DISCRIMINATORY PRACTICES

A. In performing this Contract, the Contractor shall not discriminate against any employee or applicant for employment, with respect to his or her hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, sex, age, religious creed, disability, national origin or ancestry, marital status, family status, prior psychiatric treatment, health care, military status or source of income or because of a handicap that is unrelated to the employee's or the applicant's ability to perform the duties of a particular job or position. Subcontracts with each Subcontractor shall contain a provision requiring non-discrimination in employment as herein specified. Said provisions with subcontractors shall require conformity and compliance with all local, state and federal laws, rules and regulations and Executive orders pertaining to discrimination and equal opportunity requirements.

B. Discrimination Because of Certain Labor Matters. No person employed on the work covered by this Contract shall be discharged or in any way discriminated against because such person has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or related to the labor standards applicable hereunder to its employer.

C. Equal Opportunity. In its execution of the performance of this Contract, the Contractor shall not discriminate and shall comply with applicable laws prohibiting discrimination on the grounds of race, color, religion, sex, national origin or citizenship status, age or handicap. The Contractor agrees to comply with all local, state and federal laws, rules and regulations and Executive orders pertaining to discrimination and equal opportunity requirements, and will require the same of all subcontractors

D. Affirmative Action - Pursuant to Connecticut General Statute §4a-60, as amended by June 2015 Special Session Public Act 15-5, the following are required for every Municipal Public Works Contract:

1. Every contract to which an awarding agency is a party, every quasi-public agency project contract and every municipal public works contract shall contain the following provisions:

   i. Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved;

   ii. Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission on Human Rights and Opportunities;

   iii. Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this Article, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

   iv. Contractor agrees to comply with each provision of this Article and Sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to Sections 46a-56, as amended by this act, 46a-68e, 46a-68f and 46a-86; and

v. Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this Article and Section 46a-56, as amended by this Act.

2. If the contract is a public works contract, municipal public works contract or contract for a quasi-public agency project, Contractor agrees and warrants that he or she will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works or quasi-public agency project.

ARTICLE 15 – LIENS AND BONDS

A. The Contractor, for itself, its Subcontractors and all other persons performing under the Agreement hereby waives, to the full extent permitted by law, all right to have filed or maintained any mechanics' or other liens or claims for or on account of any Work performed under the Agreement, including any Services, labor, materials or equipment to be furnished thereunder.

B. The Contractor shall: (a) indemnify, release and save harmless the Town and its affiliates and their officers, directors, employees, agents, servants, and assigns from all laborers', materialmen's, and mechanics' liens upon the real property upon which the Project is located arising out of the Services, equipment and materials furnished by the Consultant and its Subcontractors in connection with the Project; and (b) to the full extent permitted by law, keep said property free and clear of all liens, claims, and encumbrances arising from the performance of the Agreement by the Consultant and Subcontractors.

C. Consistent with the provisions of Section 49-41 of the Connecticut General Statutes and the State of Connecticut Department of Economic and Community Development's guidance entitled, "Bidding, Contracting & Construction Guidelines for State Programs" (revision October 2012) (the "DECD Guidance"), Bidders shall provide a Bid Bond with a minimum value of 5% of the bid amount.

D. Contractors retained by the Town, as recommended by the Engineer, shall furnish performance and payment bonds, each in an amount at least equal to the amounts required by Section 49-41 of the Connecticut General Statutes and the DECD Guidance as security for the faithful performance and payment of all of Contractor's obligations under the Agreement and the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified by the Town, whichever is later,

E. Any such bond(s) shall be from a surety and in form and content acceptable to Town. Copies of such bonds shall be furnished to the Town and all Subcontractors of any tier.

ARTICLE 16 – LIABILITY AND INDEMIFICATION

A. To the fullest extent permitted by law, the Contractor shall indemnify, defend, release and hold harmless, the Town, Engineer, the State of Connecticut, and each of their officers, directors, employees, agents, assigns, and servants, from and against any liabilities, fines, payments, penalties, claims, suits, actions, losses, settlement costs, demands, judgment, damages, and costs (including reasonable legal expenses) to the extent caused by any negligent, intentional or reckless act, willful misconduct or omission, on the part of Contractor and to the extent that such underlying action of the Contractor is not reasonable under the customary and generally accepted standards of the industry, its subcontractors, or any person under Contractor's control or supervision, and their officers, directors, employees, agents, servants, or assigns, that causes: (a) any breach or claimed breach of the Agreement and/or the Contract Documents (including breach of any representation or warranty in the Agreement); (b) death or injury to any person, including but not limited to the Town's or the Town's affiliates' employees, Contractor's employees, any subcontractor or their employees; (c) any damage to, environmental contamination of, or destruction of any real or personal property, including but not limited to property of the Town or the Town's affiliates; (d) any fine, payment, or additional expense imposed upon or incurred by Town or (e) natural resource damages, arising out of or connected with the Contractor's services.

B. In any and all claims against the Town, Engineer, the State of Connecticut or any of its boards, departments, officials, employees, representatives and agents by the Contractor or any employee of the Contractor, any subcontractor, any directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation above, shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under Worker's Compensation Acts, disability benefit acts or other employee benefit acts.

C. Without limiting the above, to the fullest extent permitted by law, the Contractor's obligations above shall include, but not be limited to, actions, proceedings, suits, demands, notices, orders, or threats thereof, brought issued, or made by any third party, including, but not limited to, any person, the United States Environmental Protection Agency, any State environmental agency or authority, or any citizens group.

D. Without limiting any other provision of this Article, the Contractor shall reimburse the Town, Engineer, or State of Connecticut for payment of any direct costs, penalties and/or fees pursuant to any order, decree, or other legal instrument or process of any court, agency or other governmental entity but only to the extent such are caused by the Contractor's negligence, recklessness or intentional misconduct or breach of warranty.

E. Notwithstanding any other provision of the Agreement, this Article shall survive the termination or expiration of the Agreement.

F. The Contractor shall be solely responsible for causing the timely repair to and/or replacement of, Town property or item(s) intended to become Town property hereunder, where the need for repair or replacement was caused by the Contractor's negligence, recklessness or intentional misconduct hereunder, by someone under the care and/or control of the Contractor, by any

subcontractor of the Contractor, or any contractor being supervised by the Contractor and the Contractor does not exercise reasonable supervision of such contractor. Further, the Contractor shall be solely responsible for securing the Town's written acceptance of all completed repairs and replacements hereunder. The Town hereby retains sole discretion to determine whether a repaid or a replacement is the proper remedy.

ARTICLE 17 – INSURANCE

A. At no additional cost to the Town, the Contractor shall purchase and maintain the insurance coverages set forth below which shall protect the Town from claims which may arise out of or result from the Contractor's obligations under this Agreement, whether such obligations are the Contractor's or subcontractor or person or entity directly or indirectly employed by said Contractor or subcontractor, or by any person or entity for whose acts said Contractor or subcontractor may be liable. Contractor coverage shall be primary and non-contributory. The policies with stated limits shall be maintained, in full force and effect, at all times during which the work is being performing.

B. The Contractor shall not commence work under this Agreement until all insurance required has been obtained by the Contractor and such insurance has been approved by the Town. Prior to commencing any Work under the Agreement and during the entire term of the Agreement, the Contractor, at its own cost and expense, shall procure and maintain insurance in form and amounts set forth below. Certificates of Insurance shall be issued by an insurance company with a Best's rating of A- or greater and are in A.M. Best financial size category of VII or higher.

C. Prior to commencing the Work, the Contractor shall have its insurer furnish to the Town a Certificate of Insurance evidencing the insurance coverage required by this Article. All such policies shall be written on an occurrence basis. The Contractor must supply replacement/renewal certificates within five days upon renewal the policy(ies). The Contractor shall provide written confirmation that it will not cancel or reduce the coverage afforded under the policies for any reasons unless notice of not less than thirty (30) calendar days has been mailed to the Town Administrator, 14 Park Place, Vernon, CT 06066.

D. Every Certificate of Insurance shall contain the following or equivalent clause: "No reduction, cancellation, or expiration of the policy shall be effective until thirty (30) Days from the date written notice thereof is actually received by the Contractor." Upon receipt of any notice of reduction, cancellation, or expiration, the Contractor shall immediately notify the Town.

E. The “State of Connecticut” and the “Town of Vernon and its affiliates” shall be named as Additional Insureds on the Commercial General Liability, Pollution Legal Liability and Automobile Liability insurance policies. The insurance afforded the additional named insured shall be primary insurance and non-contributory. Each insurance policy shall state that the insurance company shall agree to investigate and defend the insured against all claims for damages, even if groundless. If any insurance required herein is to be issued or renewed on a claims made form as opposed to an occurrence form, the retroactive date for coverage shall be no later than the commencement date of this agreement and shall provide that in the event of cancellation or non-renewal, the discovery period for insurance claims ("Tail Coverage") shall

be available for at least 36 months. The Contractor hereby releases and waives all rights of recovery against them for any loss or damage covered by said policies. Evidence of this requirement shall be noted on Certificates of Insurance provided to the Town. This release and waiver shall survive the termination or expiration of the Agreement.

F. In addition to Certificates of Insurance, Contractor shall provide a separate Additional Insured Endorsement with the following wording: "The Town of Vernon is listed as additional insurance as its interests may appear." Contractor shall submit the Additional Insured Endorsement to the Town prior to the start of the Work.

G. The Contractor shall be solely responsible for any and all claims, suits and actions of its employees. The Contractor hereby waives all claims and releases the State of Connecticut and Town and their affiliates from and against such claims, suits, and actions, and without limiting Article 14, shall hold harmless, and, at the State and/or the Town's option, defend the State of Connecticut and the Town and its affiliates (with counsel acceptable to the Town) from and against such claims. The complete or partial failure of the Contractor's insurance carrier to fully protect and indemnify the State of Connecticut or Town and its affiliates or the inadequacy of the insurance shall not in any way lessen or affect the obligations of the Contractor to the State of Connecticut and Town and their affiliates. Notwithstanding any other provision of the Agreement, this obligation shall survive termination or expiration of the Agreement.

H. Should the Contractor not provide or maintain any of the insurance coverage required herein, the Town shall have the right but not obligation to provide or maintain such coverage at the Contractor's expense, either by direct charge or withholding payment.

I. Failure to Maintain Coverage. In the event the Contractor fails to maintain the minimum required coverage as set forth above, the Town may stop work and, at its option, may take any and all actions available under law to address the issue.

J. THE TOWN SHALL RECEIVE WRITTEN NOTICE OF CANCELLATION FROM THE INSURED AT LEAST 30 CALENDAR DAYS PRIOR TO THE DATE OF ACTUAL CANCELLATION, REGARDLESS OF THE REASON FOR SUCH CANCELLATION.

Coverage Category General	Coverage Category Specific	Limits (Per claim/Per Incident unless otherwise marked)	Notes
General Liability		$1,000,000 Occurrence $2,000,000 General Aggregate	
	Damage to rented premises	$500,000 (each occurrence)	
	Med Ex (Any One person)	$10,000 (any one person)	
	Personal & Advertising Injury	*$1,000,000*	
	Products - Comp/Op Agg	*$2,000,000*	
Umbrella		$5,000,000 Each Occurrence, $5,000,000 General Aggregate	To cover General Liability, Automobile, Worker and Employer Liability
Automobile Liability		$1,000,000 *(combined single limit each accident)*	*All haulers of HBM must have a MCS-90 endorsement*
Workers Compensation and Employee Liability		Each Accident $1,000,000 Disease/EA Employee $1,000,000, Disease/Policy Limit $1,000,000	
Contractors Pollution		Each Claim $2M /Aggregate $4M	

ARTICLE 18 – WEATHER CONDITIONS

A. In case of temporary suspension of the work, or during inclement weather, or whenever the Owner or Engineer shall direct, the Contractor shall carefully protect his work and materials against damage or injury from the weather. The Contractor shall cause all his Subcontractors to provide the same protection for their portion of the work. If, in the opinion of the Owner or Engineer any work or material was damaged or injured by reason of failure on the part of the Contractor, or any of his Subcontractors, so to protect his work, or otherwise damaged by the negligence of the Contractor or any of his Subcontractors or their agents or servants, or is otherwise defective, such materials shall be removed and replaced at the expense of the Contractor.

B. No "winter shutdown" will be permitted for this Project. No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

ARTICLE 19 – PERMITS

A. The Contractor shall keep himself fully informed of all existing and current federal, State or local laws and regulations or ordinances that in any way limit or control the operations or actions of those engaged in the work or affecting the materials supplied to or by them. The Contractor shall at all times observe and comply with all such valid and binding ordinances, laws or regulations. The Contractor shall protect and indemnify the Owner and its representatives against any claims arising from, or based upon, any violation of the same.

B. Unless otherwise specified, Contractor shall obtain all applicable federal, State and local permits, authorizations, and registrations and make all notifications necessary to complete the project at no additional cost to the Owner. The cost of obtaining and maintaining the permits, authorizations, and registrations shall be included in the Contractor's Total Bid Price.

C. Contractor will be responsible for all applicable federal, State, and local permit fees.

D. Contractor shall be responsible for obtaining a demolition permit from the Town of Vernon. The Town has waived the local fee associated with this permit; however, Contractor shall be responsible for the costs associated with the State Education fee when obtaining the demolition permit.

E. The Owner will obtain the permits related to the removal of the raceway cover and existing dam and construction of the new dam system. These permits include a Connecticut Department of Energy and Environmental Protection (DEEP) Inland Water Resources Division (IWRD) Dam Construction Permit (DEEP-IWRD-APP-103) and a United States Army Corps of Engineers Category 1 Certification Form. Drafts of these permit applications are included in Attachment I for reference. These permit approvals will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within these permits.

F. The Owner will obtain an Agent Issued Permit from the local Inland Wetlands Commission for the Work in the upland portions of the Site. This permit will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within this permit.

ARTICLE 20 – COMMISSION ON HUMAN RIGHTS AND OPPORUNITIES (CHRO)

A. Contractor shall aggressively solicit participation of legitimate minority business enterprises consistent with 4A-60 and 4a-60a of the Connecticut General Statutes and Sections 46a-68j-21 through 43 of the Regulations of the Connecticut State Agencies.

B. Bidders must complete and sign the CHRO Bidder Contract Compliance Monitoring Report form and include with his/her Bid (Attachment F). Bids not including CHRO Contract Compliance Monitoring Report form shall be considered incomplete and shall be rejected.

C. The Contractor awarded the Work must have an Affirmative Action Plan filed with and approved by the Commission on Human Rights and Opportunities within 10 days of Notice of Award and prior to the commencement of the Work.

D. The Contractor awarded the Work must file a written or electronic nondiscrimination certification with the Commission on Human Rights and Opportunities. Forms can be found at http://www.ct.gov/opm/cwp/view.asp?a=2982&q=390928&opmNav_GID=1806.

ARTICLE 21 – TECHNICAL REPORTS AND DATA

A. Engineer has collected and analyzed samples of certain building materials for the presence of hazardous and asbestos containing materials. Laboratory data reports summarizing the results of this sampling for use by the Contractor are provided within Attachment H.

B. The results of previous testing on subsurface conditions at the Site are summarized in the following technical reports:

1. GeoDesign, Inc.: Phase II Environmental Assessment, Amerbelle Corporation, February 2004.
2. GeoDesign, Inc.: Phase I Environmental Site Assessment, Amerbelle Corporation, March 2004.
3. Metcalf & Eddy, Inc.: Field Task Work Plan for Amerbelle Textiles, Revision 1, October 2005.
4. Metcalf & Eddy, Inc.: Target Brownfields Assessment Report, Amerbelle Textiles, August 2006.
5. Fuss & O'Neill, Inc.: Quality Assurance Project Plan Addendum-Supplemental Phase II/Limited Phase III Environmental Site Assessment, Amerbelle Corporation, November 2008.
6. Fuss & O'Neill, Inc.: Limited Phase II/Limited Phase III Environmental Site Assessment, Amerbelle Textiles, December 15, 2009.
7. GZA GeoEnvironmental, Inc.: Phase III Data Gap Assessment Report – Former Amerbelle Property, July 2015.
8. GZA GeoEnvironmental, Inc.: Supplemental Phase III Investigations – Former Amerbelle Mill Property, November 2015.
9. GZA GeoEnvironmental, Inc.: Revised Remedial Action Plan – Former Amerbelle Property, November 2015.

Electronic copies of these reports are available for viewing and/or for download at http://www.vernon-ct.gov/legal-notices, RFP#1060. Copies of these technical reports are also available from Minuteman Press located at 352 Hartford Turnpike, Vernon, Connecticut for a non-refundable fee consistent with Minuteman Press reproduction pricing.

C. A video inspection/survey of the condition of the raceway walls is available upon request.

D. Information on the presence and layout of subsurface utilities and features depicted on the Project Drawings are for informational purpose only.

ARTICLE 22 – PROJECT SIGN

A. The Contractor shall provide and erect a project sign consistent with the template included in Attachment G. The location of the sign shall be as directed by the Engineer. No other contractor, subcontractor or supplier signs will be permitted on the sign. The Contractor shall maintain and keep the project sign in good condition until the work is completed at which time the Contractor shall remove the sign. All other signs to be erected on the site shall be approved by the Engineer. Provide adequate supports for the sign as sit conditions may require and keep sign a proper distance above prevailing grade to provide public viewing.

END OF SECTION

DIVISION 01
GENERAL REQUIREMENTS

SECTION 01 11 00 - SUMMARY OF WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Site Description

C. Site History

D. Scope of Work

E. Contract Bid Items

F. Contractor's Use of Site

G. Work Sequence

H. Schedule of Work

1.2 RELATED SECTIONS

A. Section 00 70 00 – Standard Conditions

B. Section 00 73 00 – Supplemental Conditions

C. Section 01 11 13 – Work Covered by Contract Documents

D. Section 01 12 19 – Contract Interface

E. Section 01 31 19 – Project Meetings

F. Section 01 33 00 – Submittal Procedures

G. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

H. Section 01 35 43 – Environmental Procedures

I. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

J. Section 01 35 53 – Security Procedures

K. Section 01 50 00 – Temporary Facilities and Control

L. Section 01 50 10 – Temporary Water Control

M. Section 01 55 26 – Traffic Control

N. Section 01 57 13 – Temporary Erosion and Sediment Control

O. Section 01 57 16 – Temporary Project Controls

P. Section 01 66 00 – Product Storage and Handling Requirements

Q. Section 01 70 00 – Execution and Project Closeout

R. Section 01 74 00 – Final Cleaning

S. Section 01 78 00– Project Record Documents

T. Section 02 41 00 – Demolition

U. Section 02 81 00 – Waste Management and Disposal

V. Section 02 82 00 – Asbestos Remediation

W. Section 02 84 00 – Hazardous Material Remediation

X. Section 03 30 00 – Reinforced Cast In-Place Concrete

Y. Section 04 05 00 – Repair of Stone Masonry Walls

Z. Section 05 30 00 – Metal Decking

AA. Section 05 52 13 – Pipe and Tube Railings

BB. Section 07 10 00 – Weather Proofing

CC. Section 31 00 00 – Earthwork

DD. Section 31 05 13 – Soils and Aggregates for Earthwork

EE. Section 31 37 00 – Stone and Riprap

FF. Section 31 52 00 – Temporary Cofferdams

GG. Section 32 00 00 – Fencing

HH. Section 32 90 00 – Landscape Work

II. Section 40 05 59 – Slide Gate

1.3 SITE DESCRIPTION

A. LOCATION OF WORK

The Work under the Agreement is to be performed at the former Amerbelle Mill Site located at 104 East Main Street and 5 Brooklyn Street, Vernon, Connecticut, as shown on the Drawings, hereinafter referred to as the "site" or "Site." The Site consists of the former Amerbelle Corporation textile mill facility which is composed of 14 buildings situated on two parcels, north and south of Brooklyn Street. The parcel north of Brooklyn Street is approximately 1.5 acres in size and contains Buildings 1 through 9, 11 and 13, a skyway/bridge and a building housing two 20,000-gallon aboveground storage tanks (ASTs). The parcel located south of Brooklyn Street is approximately 2.7 acres and contains Buildings 12 and 14. A second skyway/bridge spans Brooklyn Street and connects the buildings on the two parcels. The Hockanum River runs from southeast to northwest through the Site within a stone and concrete lined raceway. The raceway, starting from Paper Mill Pond to the southeast, passes below the northeast portion of Building 14, Brooklyn Street and Buildings 7 and 4 in the northern portion of the Site and spills down into American Mill Pond to the northwest. The Site is owned by The Town of Vernon, Connecticut and is currently vacant. Vehicle access to the Site is provided by fence gates along Brooklyn Street and East Main Street along with open parking areas.

1.4 SITE HISTORY

A. The Site is the location of the former Amerbelle Corporation textile mill facility, which operated at the property from the late 1880s until approximately 2012. During the time of its operation, the Amerbelle Corporation produced specialty textiles for various applications. Building 14 within the southern parcel was formerly used for dyeing, mixing and finishing operations and Building 12 was reportedly used for maintenance and repair of equipment and parts. In addition to dyeing operations, buildings within the northern parcel were also formerly used for coating operations, testing, and storage. The Site is currently vacant.

1.5 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, services, insurance, tools, equipment, temporary facilities, decontamination facilities, and incidentals to perform Work in accordance with the Contract Documents, including the Drawings and Specifications and applicable laws, permits, regulations, codes, ordinances and standards. The Work consists of, but is not limited to the following:

1. Preparation of Work Plans and Submittals as listed in Table A attached to Section 01 33 00 – Submittal Procedures and as described in these Specifications.
2. Unless otherwise indicated in Section 00 73 00 – Supplemental Conditions, obtain (including paying all fees) and maintain all local, State,

and federal permits required to perform the Work. Required permits include, but are not necessarily limited to the following:

a. Town of Vernon demolition permit including all utility termination sign-offs.
b. Connecticut Water Company hydrant use permit (if needed)
c. State of Connecticut Department of Public Health (CTDPH) Asbestos Start Work Notification 10 working days prior to the commencement of asbestos abatement activities.
d. CTDPH Application for Alternative Work Practices (if needed).
e. Submission of required post-abatement documentation to CTDPH.
f. Connecticut Call Before You Dig notification.

3. The Owner will obtain the permits related to the removal of the raceway cover and existing dam and construction of the new dam system. These permits include a Connecticut Department of Energy and Environmental Protection (DEEP) Inland Water Resources Division (IWRD) Dam Construction Permit (DEEP-IWRD-APP-103) and a United States Army Corps of Engineers Category 1 Certification Form. Drafts of these permit applications are included in Attachment I for reference. These permit approvals will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within these permits.

4. Mobilization of all required personnel, equipment, and materials to the Site.

5. Prepare a Site-Specific Health and Safety (H&S) Plan, provide documentation of required Occupational Safety and Health Administration (OSHA) training and medical monitoring for all employees, and conduct H&S monitoring for the duration of the Work in accordance with Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites and other relevant portions of the Contract Documents.

6. Attendance at, preparation for and participation in all required meetings consistent with Section 01 31 19 – Project Meetings.

7. Site preparation, including, but not limited to, construction of material staging areas; clearing vegetation and debris; construction of temporary Work platforms, access roads, and construction entrances; protection of adjacent structures and other features; protection of existing asphalt and monitoring wells; and utility clearance/protection/guarding in accordance with Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites, Section 02 41 00 – Demolition, and Section 31 00 00 – Earthwork.

8. Staging, installation, set-up, maintenance, and removal of temporary facilities and controls including temporary closure of Brooklyn Street in accordance with Section 01 35 43 – Environmental Procedures, Section 01 35 43.13 – Environmental Procedures for Hazardous Materials, Section 01 35 53 – Security Procedures, Section 01 50 00 – Temporary Facilities and Controls, Section 01 55 26 – Traffic Control, and Section 01 57 16 – Temporary Project Controls. Contractor may elect to install permanent 6-foot high chain link fencing in lieu of temporary 8-foot high chain link fencing at the start of the Work in areas that would not interfere with the performance of the Work.

9. Installation, maintenance, and removal of erosion and sedimentation controls as shown on the Drawings and in accordance with Section 01 57 13 – Temporary Erosion and Sediment Control and all permits and approvals to complete the Work.

10. Removal, characterization, containerization, on-Site management, transportation, and off Site disposal/recycling of asbestos-containing materials (ACM) and hazardous materials identified in Table 1 – Confirmed Asbestos-Containing Material, identified in Table 2 – Hazardous Materials Inventory and identified during the performance of the Work in accordance with Section 02 81 00 – Waste Management and Disposal, Section 02 82 00 – Asbestos Remediation, and Section 02 84 00 – Hazardous Materials Remediation.

11. Termination and/or removal/abandonment of utilities and associated appurtenances associated with the buildings and Site features to be demolished in accordance with Section 02 41 00 – Demolition. Restoration of all required utility abandonment areas in accordance with applicable Town of Vernon and Connecticut Department of Transportation (CTDOT) standards.

12. Demolition of Buildings 2, 5, (roof and interior only as ACM), 6 (interior only), 7, 8, 13, 14, the AST building, Boiler Room 2, Sky Way 2, the fiberglass boiler stack, , , and other miscellaneous Site features within the Limits of Work including, but not limited to, concrete tank cradles, utility poles and support structures, concrete slabs, concrete foundations, asphalt, retaining walls, landscaping, certain utilities (overhead and underground), ramps, bollards, and fencing in accordance with Section 02 41 00 – Demolition and as shown on the Drawings. Certain concrete slabs not scheduled for removal as shown on the Drawings will be perforated/fractured to the satisfaction of the Engineer to promote infiltration.

13. Removal, management, segregation, loading, transportation and off-Site disposal of PCB impacted concrete masonry units (CMU) from Building 14 as indicated on the Drawings and in accordance with Section 02 41 00

– Demolition, Section 02 81 00 – Waste Management and Disposal, and Section 02 84 00 – Hazardous Material Remediation.

14. Removal, management, segregation, loading, transportation and off-Site disposal of petroleum impacted wood decking from Building 14 in accordance with Section 02 41 00 – Demolition and Section 02 81 00 – Waste Management and Disposal.

15. Sealing and weather proofing all openings and wall penetrations within the remaining buildings that are exposed or created during demolition of adjacent buildings/structures in accordance with Section 07 10 00 – Weather Proofing.

16. Repair and weather proofing of roofs of the remaining buildings in accordance with Section 07 10 00 – Weather Proofing.

17. Securing, sealing and weather proofing existing exterior windows and doors on the remaining buildings in accordance with Section 07 10 00 – Weather Proofing to prevent water infiltration and unauthorized access.

18. Removal and demolition of the concrete cover over the raceway and removal of the raceway dam and associated appurtenances as shown on the Drawings and in accordance with Section 02 41 00 – Demolition and all associated permits and approvals. Work includes temporary diversion of the water within the raceway in accordance with Section 01 50 10 – Temporary Water Control.

19. Processing of certain buildings materials to 3 inch minus for reuse as on-Site backfill as directed by the Engineer and in accordance with Section 02 41 00 – Demolition.

20. Backfilling, compaction and grading of foundations, basements, pits, trenches, and vaults as shown on the Drawings and in accordance with Section 31 00 00 – Earthwork.

21. Import and placement of Free Draining Material as directed by the Engineer in accordance with Section 31 00 00 – Earthwork and Section 31 05 13 – Soils and Aggregates for Earthwork

22. Import and placement of loam followed by placement of grass seed and jute netting as indicated on the Drawings and in accordance with Section 31 00 00 – Earthwork, Section 31 05 13 – Soils and Aggregate for Earthwork, and Section 32 90 00 – Landscaped Work.

23. Supply, installation and construction of a new dam system as shown on the Drawings and in accordance with Section 03 30 00 – Reinforced Cast In-Place Concrete, Section 05 30 00 – Metal Decking, Section 05 52 13 – Pipe and Tube Railings, Section 31 37 00 – Stone and Riprap, Section 31

52 00 – Temporary Cofferdams, Section 40 05 59 – Slide Gate and all associated permits and approvals. Work includes temporary diversion of the water within the raceway in accordance with Section 01 50 10 – Temporary Water Control.

24. Supply, fabrication, and installation of a reinforced concrete cap on the top of the raceway wall as indicated on the Drawings and in accordance with Section 03 30 00 – Reinforced Cast In-Place Concrete.

25. In-filling/repointing of raceway walls as indicated on the Drawings and in accordance with Section 04 05 00 – Repair of Stone Masonry Walls and all associated permits and approvals.

26. Supply and installation of rip-rap within the raceway to mitigate scour and damage to raceway walls as shown on the Drawings and in accordance with Section 31 00 00 – Earthwork and Section 31 37 00 – Stone and Riprap, and all associated permits and approvals.

27. Installation of a guardrail system on the north and south sides of the Brooklyn Street bridge and permanent 6-foot chain-link fence as shown on the Drawings and in accordance with Section 32 00 00 – Fencing.

28. Installation of asphalt curbing as shown on the Drawings and in accordance with Section 32 90 00 – Landscaped Work.

29. Engagement of a State of Connecticut licensed surveyor to develop stamped As-Built Record Drawings in accordance with Section 01 78 00 – Project Record Documents to document the Work performed.

30. Demobilization including, but not limited to removal of all personnel, equipment, and materials from the Site, final cleaning, and project closeout in accordance with Section 01 50 00 – Temporary Facilities and Controls, Section 01 74 00– Final Cleaning, Section 01 70 00 – Execution and Project Closeout, and Section 01 78 00 – Project Record Documents.

31. Provide any other miscellaneous items or work required to complete the Work in accordance with the Contract Documents.

B. Work shall include replacement, repair, and/or re-installation, as necessary and appropriate, of any items which do not comply with the Contract Drawings and/or Specifications at no additional cost to the Owner.

C. The Work shall be performed under one Contract Document with project oversight by the Owner and/or Engineer.

D. If additional data become available during the execution of the Contract, the Owner has the right to reevaluate the requirements of the Contract and modify the work to be performed, as necessary. Payment shall be made as outlined in

Section 00 70 00 – Standard Conditions and the Agreement between the Town of Vernon and the Contractor.

E. All material transported off-site for disposal or recycling in connection with the Work shall be shipped to an Owner approved disposal/recycling facility. All Contractor proposed disposal and recycling facilities shall be approved by the Owner prior to transport of the wastes.

1.6 CONTRACT BID ITEMS

A. A Schedule of Values for each Lump Sum item on the Bid Form shall be provided with the Bid. All pricing shall be appropriately apportioned to the various parts of the Work. If requested by Owner, Contractor shall substantiate any price or prices with additional breakdown. The Schedule of Values will require review and approval by the Engineer and Owner.

B. A listing of proposed recycling/disposal facilities for asbestos, hazardous materials, universal waste, metal, asphalt, brick, concrete, PCB impacted CMU, Petroleum impacted wood decking, construction and demolition debris, and solid waste shall be provided with the Bid.

C. The scope of each Bid Item is described in Section 01 20 00 – Price and Payment Procedures and summarized for convenience purposes only on the Bid Form (Section 00 41 00).

D. Contractor shall visit the Site and inspect the nature and condition of the facilities prior to Bid submission. No increase in price or extension of time will be considered for failure to fully understand the conditions of the Site and structures as outlined in Section 00 70 00 – Standard Conditions.

1.7 CONTRACTOR'S USE OF SITE

A. Limits of Work shall be confined to the smallest reasonable and practicable area to perform Work in a safe and efficient manner within the Limits of Work shown on the Drawings. Equipment staging areas, material storage areas, and decontamination stations shall be within the Contractor's Limit of Work. Access to and from the Work Site shall only be by the means designated by the Owner. Under no circumstances shall the Contractor perform any Work or conduct any activities at the Site outside of the Contractor's Limit of Work. Any disturbed area(s) shall be restored to original conditions by the Contractor at no additional cost to the Owner.

B. Contractor shall:

1. Assume responsibility for Site security within the Limits of Work. Prevent entry by non-project personnel during Work hours. Provide sufficient security to prevent trespassing and vandalism during non-

working hours. Confine operations to within Limits of Work shown on the Drawings and shall not encumber adjacent properties.

2. Protect adjacent properties, utilities, and all existing Site features to remain, including but not limited to, buildings, utilities, fencing, monitoring wells, and asphalt and concrete surfaces.

3. Conform to all applicable laws, regulations, codes, ordinances and standards and Contract Documents.

4. Assume full responsibility for health and safety of the Contractor's employees and subcontractor employees while at the Work Site and for implementation of the Contractor's Health and Safety Plan for the Work.

5. Work harmoniously with Site personnel, the Engineer, the Owner and his representatives, Contractors, and all other entities engaged by the Owner necessary to complete the Work.

C. Contractor shall plan and schedule Work activities to be performed Monday through Friday between the hours of 7:00 a.m. and 6:00 p.m. unless otherwise requested in advance by the Contractor (minimum two days) and approved in writing by the Owner. No construction equipment shall be permitted to operate prior to 7:00 a.m. or past 6:00 p.m. without prior approval by the Owner.

D. The Contractor shall plan and schedule Work activities to be limited to weekdays, unless otherwise requested in advance (minimum two days) and approved in writing by the Owner.

1.8 WORK SEQUENCE

A. Contractor shall submit a Preliminary Progress Schedule with their Bid outlining all major Work activities associated with the Contract described in these Specifications and shown on the Drawings. This schedule shall address all major Site activities from the submission of project submittals through demobilization. The schedule shall describe Contractor's sequence and schedule for each component of Work organized by building number, the length of time required to complete each component of the Work, and shall take into account the project sequencing and permitting restrictions. This Preliminary Progress Plan and Schedule shall be in the form of a Gantt Chart.

B. In accordance with the Agreement between the Town of Vernon and the Contractor, within 10 days after commencement of the Contract Times, a final version of the Preliminary Progress Schedule, designated as the Progress Schedule, shall be submitted electronically by Contractor as specified in Section 01 33 00 – Submittals Procedures.

C. Contractor shall prepare a Progress Schedule based on the Preliminary Progress Schedule. This schedule shall identify all task items in sufficient detail to

demonstrate how Contractor will execute and sequence the Work. The Construction Progress Schedule shall be consistent with the requirements of Section 00 70 00 – Standard Conditions and the milestones, sequencing and completion dates and restrictions described in this Specification.

D. The Progress Schedule shall be in the form of a Gantt chart and shall consist of horizontal lines, or bars, plotted along a daily time scale. The schedule shall have a separate line for each section of Work, and shall identify the first work day of each week. It shall show the complete sequence of work by building number and activities, identifying Work of separate stages and other logically grouped activities, and shall indicate early and late start, early and late finish, float dates, and duration. The time-scale shall indicate all required Milestone and Completion dates as set forth in the Contract Documents. The horizontal bar(s) shall indicate the start and finish dates as well as the total time period of performance for each activity. Contractor shall arrange the chart so as to show the activities which are necessary to fulfill each and every Milestone and Completion date requirement.

E. If Engineer finds that the submitted schedule does not comply with project requirements, the corrective revisions will be noted on the submittal copy and returned to Contractor. Contractor shall resubmit revised schedule within five days.

F. The Contractor shall perform all work consistent with the Engineer approved Progress Schedule. Hazardous material and asbestos removal shall be performed prior to building demolition work.

G. The Contractor shall perform Work in a manner that will allow the Site and adjacent property owners to maintain normal activities on their sites. The Contractor must ensure that neighboring operations or activities are not disturbed, interrupted, or prohibited as a result of Work.

H. Work sequencing shall be conducted in a manner that prevents contamination or recontamination of areas not contaminated or already decontaminated, and in accordance with the Contract Documents. Any contamination or recontamination of materials that occurs as a result of the Contractor's activities shall be restored by the Contractor at no additional cost to the Owner.

I. Work sequencing shall be conducted in a manner to coordinate staging and loading of materials to be transported and disposed/recycled off the Site.

J. The Progress Schedule shall be updated by the Contractor at least weekly. Contractor shall notify Engineer and submit an updated project schedule with any modifications to the sequence of Work.

1.9 SCHEDULE OF WORK

A. All Work must be substantially completed within 168 calendar days of the Notice to Proceed and completed and ready for final payment within 184 calendar days

of the Notice to Proceed consistent with the Engineer-approved Progress Schedule.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01 11 13 - WORK COVERED BY CONTRACT DOCUMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Work Covered by Contract Documents

1.2 RELATED SECTIONS

A. Section 00 70 00 – Standard Conditions

B. Section 00 73 00 – Supplemental Conditions

C. Section 01 11 00 - Summary of Work

D. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

E. Section 01 35 43 - Environmental Procedures

F. Section 01 35 53 - Security Procedures

G. Section 01 50 00 - Temporary Facilities and Controls

H. Section 01 50 10 – Temporary Water Control

I. Section 01 55 26 - Traffic Control

J. Section 01 57 13 - Temporary Erosion and Sediment Control

K. Section 01 57 16 - Temporary Project Controls

L. Section 01 74 13 - Progress Cleaning

M. Section 01 74 23 - Final Cleaning

N. Section 01 78 39 - Project Record Documents

O. Section 02 41 00 - Demolition

P. Section 02 81 00 - Waste Management and Disposal

Q. Section 02 82 00 - Asbestos Remediation

R. Section 02 84 00 - Hazardous Material Remediation

S. Section 03 30 00 – Reinforced Cast In-Place Concrete

T. Section 04 05 00 – Repair of Stone Masonry Walls

U. Section 05 30 00 – Metal Decking

V. Section 05 52 13 – Pipe and Tube Railings

W. Section 07 10 00 – Weather Proofing

X. Section 31 00 00 – Earthwork

Y. Section 31 05 13 – Soils and Aggregates for Earthwork

Z. Section 31 37 00 – Stone and Riprap

AA. Section 31 52 00 – Temporary Cofferdams

BB. Section 32 31 13 – Fencing

CC. Section 32 90 00 – Landscape Work

DD. Section 40 05 59 – Slide Gate

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Contractor shall comply with all requirements set forth in the Agreement between the Town of Vernon and the Contractor, Section 00 70 00 – Standard Conditions, Section 00 73 00 – Supplemental Conditions, and the other sections of the Contract Documents.

B. FAMILIARIZATION - Contractor is responsible for becoming familiar with all aspects of the Work and the Site prior to performing the Work in accordance with Section 00 70 00 – Standard Conditions.

C. COOPERATION - Contractor shall cooperate with all other parties engaged in project related activities as well as Owner's employees, representatives, and contractors to the greatest extent possible. The Contractor shall confine operations at the Site to within the Limits of Work shown on the Drawings. Disputes or problems should be submitted in writing by the Contractor to the Owner for resolution.

D. PERSONNEL SIGN-IN – Contractor shall furnish and maintain a daily sign-in/sign-out log for all personnel on-Site. The log shall meet, at a minimum, the requirements of Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites.

E. CONSTRUCTION ACCESS – The Limits of Work are shown on the Drawings and described in these Specifications. The Limits of Work include the locations

of staging areas, on-Site access roads, stockpile areas, and lay-down areas. Areas of the Site beyond the Limits of Work are not to be accessed or disturbed. Contractor shall conform to Site rules and regulations affecting the Work while engaged in construction. The Contractor, including all personnel and subcontractors, shall be familiar with security requirements and shall comply with all security requirements. Refer to Section 01 50 00 - Temporary Facilities and Controls, Section 01 50 10 – Temporary Water Control, Section 01 35 53 - Security Procedures, Section 01 55 26 - Traffic Control, and Section 01 57 13 - Temporary Erosion and Sediment Control.

F. CONSTRUCTION PERSONNEL PARKING – Contractor is responsible for coordination of personnel parking in accordance with Section 01 55 26 - Traffic Control.

G. TEMPORARY CONTRACTOR OFFICES – No contractor field offices are permitted within the Site buildings. Contractor shall furnish temporary construction offices with services for the Contractor and Engineer. The temporary construction office shall be located in the parking area south of Building 14 as shown on the Drawings. See Section 01 50 00 - Temporary Facilities and Controls for additional requirements.

H. TEMPORARY ROADS, WORK PLATFORMS, AND MATERIAL LAYDOWN AREAS - Contractor shall be responsible for constructing and maintaining all temporary roads, work platforms, and material lay-down areas that may be required in the execution of the Work. Material lay-down areas, work platforms, and temporary access roads shall be designed, constructed, maintained, and removed as described in these Specifications by the Contractor. Locations and details of the temporary roads and material lay-down areas shall be submitted to the Engineer for approval in accordance with the Specifications. At the completion of the Work, the temporary roads, work platforms, and material lay-down areas shall be removed in accordance with the Specifications.

I. CONSTRUCTION WATER – Contractor is responsible for obtaining water for construction, dust control, and decontamination. Contractor shall coordinate with the Connecticut Water Company to obtain a hydrant use permit, install a temporary water service, or obtain water from an alternative off-Site source approved by the Owner and Engineer. The use of water from the raceway or adjacent ponds is not permitted. The Contractor is responsible for metered water rates and fees as well as supplying all materials, equipment, and labor required to install temporary water service. The Contractor shall not add substances (such as soap) to construction water.

J. TEMPORARY ELECTRICAL SERVICE – Contractor is responsible for obtaining electrical service for all work activities. Electrical service is not available for the Contractor at the Site. The Contractor is responsible for coordination of service drop location with the appropriate utility owner and/or generator(s) for conveyance of temporary electrical service to the Work areas

including all necessary permits, temporary supports, panel boards, connections for utility wiring, outlets, switched, circuit protection devices, controls, and accessories. Contractor may utilize generators for temporary power throughout the Work. All generators shall operate within noise limits set forth in the Specifications. Generators required to operate overnight shall be enclosed or equipped with sufficient noise reduction devices so that the generators are not audible from the Limits of Work.

K. STORM WATER AND GROUNDWATER- Contractor is responsible for control, and management of any stormwater or groundwater encountered or requiring management during all Site activities. Contractor is responsible for maintaining and protecting stormwater collection structures within the Limits of Work, on access roads outside the Limits of Work, and public roads from untreated stormwater, construction water, soil, and debris.

L. WORK HOURS AND DAYS – On weekdays (Monday through Friday), Work shall only be performed during the hours between 7:00 a.m. to 6:00 p.m. Work shall abide by Town and State regulations for noise. The Contractor may alter work hours for the Work only after receiving written permission from the Owner. After receiving the appropriate approvals, the Engineer must be notified 48 hours before each work day where the Work will be conducted outside the 7:00 a.m. to 6:00 p.m. Monday through Friday window. If complaints are received by the Owner regarding noise due to Work activities then no further work shall be performed until noise reduction measures are implemented and approved by the Owner. No Work will be permitted on Saturdays and Sundays unless otherwise approved by the Owner.

M. DELIVERY AND MATERIAL TRANSPORTATION SCHEDULING – Contractor shall coordinate material delivery and off site transportation to prevent disruption of traffic on public roadways. Contractor is responsible for coordinating all deliveries and off site transportation with subcontractors and vendors.

N. SURVEYING – Contractor shall furnish Owner with "As-Built Record Drawings" (also referred to as "As-Built" Drawings) of the Work. All surveying shall be performed under the direction of a registered Land Surveyor licensed to perform such Work in the State of Connecticut. All Record Drawings shall be signed and sealed by the licensed surveyor who directed the survey Work. All surveys shall use the grid system and datum of the Site, unless otherwise directed, in writing, by the Engineer.

O. WORK LIMITS – All Work activities shall be confined to the Limits of Work shown on the Drawings and completed to the lines, grades, and dimensions called for on the Drawings and Specifications unless directed otherwise by the Owner or Engineer. All Work performed beyond designated limits without prior approval shall be corrected to the Owner's satisfaction, at no additional cost to the Owner.

P. CONSTRUCTION TOLERANCES - Construction tolerances shall be consistent with the Drawings and Specifications. All surfaces shall be reasonably free from irregularities. Slopes or grades shall not be less than specified minimums or greater than specified maximums as shown on the Drawings.

Q. PERMITS - The Contractor shall be held responsible for understanding, obtaining, paying all fees and complying with all permits and notifications required for asbestos and hazardous material removal and demolition activities. Required permits include, but are not necessarily limited to a Town of Vernon demolition permit, a Connecticut Water Company hydrant use permits, submission of a State of Connecticut Department of Public Health (CTDPH) Asbestos Start Work Notification 10 working days prior to the commencement of asbestos abatement activities, a CTDPH Application for Alternative Work Practice (if needed), and Call Before You Dig (CBYD) notification. The Contractor is responsible for complying with all conditions off all applicable permits throughout the Work.

The Owner will obtain the permits related to the removal of the raceway cover and existing dam and construction of the new dam system. These permits include a Connecticut Department of Energy and Environmental Protection (DEEP) Inland Water Resources Division (IWRD) Dam Construction Permit (DEEP-IWRD-APP-103) and a United States Army Corps of Engineers Category 1 Certification Form. Drafts of these permit applications are included in Attachment I for reference. These permit approvals will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within these permits.

The Owner will obtain an Agent Issued Permit from the local Inland Wetlands Commission for the Work in the upland portions of the Site. This permit will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within this permit.

R. ENVIRONMENTAL PROTECTION – Contractor shall comply with all requirements for protecting the environment, including, but not limited to, controlling erosion, water pollution, spill control, dust emissions, vapors, odors noise, and vermin resulting from construction activities without exception. Refer to Section 01 35 43 - Environmental Procedures, Section 01 50 10 – Temporary Water Control, Section 01 57 13 - Temporary Erosion and Sediment Control, and Section 01 57 16 - Temporary Project Controls.

S. PROTECTION OF STRUCTURES TO REMAIN – The Contractor shall exercise care and provide protection to avoid disturbing or damaging adjacent structures not scheduled for demolition. Any damage to existing features to remain should be repaired to the satisfaction of the Engineer at no additional cost to the Owner.

T. PROTECTION OF EXISTING SERVICES – Contractor shall exercise care to avoid disturbing or damaging any existing utilities and structures which exist at

the Site. Contractor shall be responsible for repairing any utility damaged as a result of the Work. The Contractor shall contact CBYD, and all other utility companies not conducted by CBYD 72 hours prior to the initiation of excavation activities. The Contractor shall also coordinate with the Engineer prior to commencing with the Work. If Contractor encounters any unexpected utilities during the course of the Work, Contractor shall inform the Owner and Engineer immediately. The locations of any utilities shown on the Drawings are approximate and shall be verified in the field by the Contractor prior to initiation of Work.

U. PROTECTING EXISTING MONITORING WELLS - Existing groundwater monitoring wells to be protected by the Contractor are shown on the Drawings. The Contractor shall protect these wells throughout the Work unless otherwise approved by the Engineer. If the wells are damaged or destroyed by the Contractor, the Contractor will perform any repairs to these wells, including re-installation if necessary, at no additional cost to the Owner. The locations of the monitoring wells shown on the Drawings are approximate and shall be verified in the field by the Contractor prior to initiation of Work.

V. SAFEGUARDS - Contractor shall provide and use all personnel safety equipment, barricades, guardrails, road plates, signs, lights, flares, and flagmen/details as required by Occupational Health and Safety Administration, State, or local codes and ordinances. Contractor shall be solely responsible for any fines imposed due to violation of any laws and regulations relating to the safety of the Contractor's personnel. Contractor shall ensure all subcontractors comply with this requirement. See Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites, for further Health and Safety Plan requirements.

W. HEALTH AND SAFETY TRAINING - Contractor shall prepare a site-specific Health and Safety Plan ("HASP") and provide necessary health and safety training for all of the Contractor's and subcontractor's on-Site personnel in accordance with applicable local, State, and federal regulations. Owner shall require evidence of health and safety training prior to the commencement of Work and may request evidence at any time for any of the Contractor's or subcontractor's personnel working on the Site. Training certifications shall be maintained on the Site at all times. See Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites for further Health and Safety Plan requirements.

X. SECURITY – Contractor is responsible for security on the Site throughout completion of Work activities. The Contractor is responsible for the safety and condition of all of Contractor's tools and equipment. Owner and Owner's agents shall not be responsible for lost or stolen materials or equipment. See Section 01 35 53 - Security Procedures.

Y. NUISANCE CONDITIONS - Contractor shall be responsible for controlling noise/vibration, dust, vapor, vermin, and odors so as to not create a nuisance condition.

Z. HOT WORK – Hot Work shall be minimized and will not be performed without prior notification to the Engineer. Any Hot Work shall be in accordance with the Town of Vernon requirements and as specified in the Contract Documents.

AA. EXPLOSIVES - Use of explosives at the Site are not permitted.

BB. BURNING - Burning of any materials at the Site is not permitted.

CC. ACCEPTANCE OF WORK - The Contractor shall retain ownership and responsibility for all Work until accepted by the Owner. The Owner will accept ownership of the Work in accordance with Section 00 70 00 – Standard Conditions.

DD. CLEAN-UP – The Contractor shall be responsible for general housekeeping during the Work in accordance with the Contract Documents. Upon completion of the Work, the Contractor shall remove all of his/her equipment, facilities, construction materials, and trash. All disturbed areas shall be restored, or otherwise put into a condition satisfactory to the Owner. See Section 01 74 23 - Final Cleaning.

EE. PERSONNEL RESPONSIBILITIES – Contractor is responsible to inform their employees and employees of subcontractors and distributors that any lewd actions, verbal and any racial or sexual comments directed toward any individual on the project site is strictly prohibited. Incidents of this type may result in immediate and permanent dismissal of the employee(s) involved. Repeat offenses by a Contractor's employees may lead to the dismissal of the Contractor and/or removal of the Contractor from future bid considerations. Smoking by Contractor personnel is not allowed in buildings, around occupied buildings, or any place where it causes a hazard or inconvenience to non-smokers.

FF. INCIDENT REPORTING – All incidents involving personnel, equipment, or affecting the environment must be reported to the Engineer as soon as possible and, at a minimum, within 2 hours of the incident. Each of these incidents must be accompanied by a follow-up investigation report in accordance with Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01 12 19 – CONTRACT INTERFACE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Responsibilities of Parties

C. Interpretation of Contract Drawings and Specifications

D. Temporary Suspension of the Work

1.2 RELATED SECTIONS

A. Section 00 70 00 – Standard Conditions

B. Section 00 73 00 – Supplemental Conditions

C. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

D. Section 01 57 16 - Temporary Project Controls

1.3 RESPONSIBILITIES OF PARTIES

A. OWNER

1. The Town of Vernon is the Owner responsible for facility administration, accounting, purchasing, etc. On-site construction activities are monitored for the Town of Vernon by the Engineer.

B. ENGINEER

1. GZA GeoEnvironmental, Inc. (GZA) is the Engineer for this project and is responsible for the administration of Contract Drawings and Specifications and Contractor communications. The Engineer reports to the Owner. The Engineer will communicate directly with the Contractor to coordinate activities and will receive information directly from the Contractor to be conveyed to the Owner.

2. The Engineer is responsible for observing and documenting construction activities on the Site and ensuring conformance with the Contract Drawings and Specifications. The Engineer will collect all material certifications from the Contractor. The Engineer will be responsible for reviewing Contractor Submittals. The Engineer has prepared the Contract

Drawings and Specifications and is responsible for the interpretation of the Contract Drawings and Specifications. The Engineer will review proposed alterations or modifications to the project design as formally requested by the Contractor. The Engineer and Owner will decide all questions that arise regarding the interpretation of the Contract Drawings and Specifications.

3. The Engineer will conduct perimeter ambient air monitoring throughout on-Site activities. This work will be independent of air monitoring requirements that are the responsibility of the Contractor as specified in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites and Section 01 57 16 – Temporary Project Controls. Data collected from the air monitoring will be used by the Owner and the Engineer to provide documentation of air quality parameters at the Site. The Owner and the Engineer reserve the right to suspend or modify Work at the Site if perimeter air monitoring threshold levels as identified in Section 01 57 16 – Temporary Project Controls are exceeded. In the event these threshold levels are exceeded, resulting suspensions and/or modifications of Work shall be performed by the Contractor at no additional cost to the Owner. The Engineer is responsible for preparing a final inspection report documenting demolition activities in accordance with the requirements of the Drawings and Specifications.

C. CONTRACTOR

1. The Contractor is responsible for implementing and ensuring the completion of the Work and for producing As-Built Record Drawings documenting the Work performed. The Contractor is responsible for procuring permits and completing notifications to these Specifications, procuring the services of subcontractors as necessary to complete the Work as needed, and is responsible for the Work of his subcontractors as he is for his own Work. The Contractor reports to the Owner, but shall communicate directly with the Engineer.

2. The Contractor is subject to requirements of local, State, and federal agencies for implementation of the Work. Details pertaining to jurisdictional requirements governing the Work that are not specifically mentioned in the Contract Documents shall not relieve the Contractor's obligation to be in compliance with applicable requirements.

1.4 INTERPRETATION OF CONTRACT DRAWINGS AND SPECIFICATIONS

A. Should it appear that the Work to be done or any matters relative thereto are not sufficiently detailed or explained in the Contract Drawings and Specifications, upon written request, the Engineer will further explain, clarify, or interpret, as may be necessary. In the event of any questions arising with respect to pay items resulting from the Engineer's interpretation of the Contract Drawings and

Specifications, the matter shall be referred to the Owner for resolution, whose decision thereon shall be final.

Contract Drawings are intended to be illustrative and may not be an exact or a complete representation of actual field conditions or the actual finished Work. For the finished Work, Contractor shall include all necessary extra material required to make each installation satisfactory and operable for its intended purpose, even though some items may not be specifically depicted on the Contract Drawings.

1.5 TEMPORARY SUSPENSION OF THE WORK

A. For Specification of the Owner's Right to Suspend Work refer to Section 00 70 00 – Standard Conditions.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01 20 00 – PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Description

B. Scope of Payment

C. Payment for Increased or Decreased Quantities

D. Omitted Items

E. Progress Payments

F. Payment for Material Delivered

G. Measurement of Quantities

H. Incidental Work

1.2 DESCRIPTION

A. All payment specifications set forth in the Agreement and Section 00 70 00 – Standard Conditions shall be complied with unless otherwise specified herein.

B. Unless otherwise specified, for lump-sum items, payment will be made as set forth in the Agreement on the basis of actual Work completed in accordance with the Contractor submitted Schedule of Values and agreed to by the Owner.

C. For certain lump sum payment items, estimated quantities have been provided within and in the attachments to the Specifications. These quantity estimates are provided to the Contractor for reference purposes only. Contractor is responsible for confirming all quantities for these lump sum items. No adjustment to the lump sum payment items will be made on the basis of quantity variation.

D. For unit-price items, payment will be based on the actual amount of Work accepted by the Owner and for the actual quantity of materials in place and accepted in conformance with the Contract Documents, as shown by final measurement.

E. All units of measurement shall be standard United States convention as applied to the specific items of Work by tradition and as interpreted by the Engineer. Payment units will be as indicated on the Bid Form.

F. At the end of each day's Work, the Contractor shall meet with the Engineer and determine the quantities of Work accomplished and/or completed during the Work day. Contractor shall then prepare a "Daily Work Summary" report which shall be signed by the Contractor and provided to the Engineer. Quantities that are to be measured based on survey as specified herein may be approximated at the end of each day's Work by the Contractor and the Engineer, and this information shall be noted in the Daily Work Summary.

G. Once each month the Contractor shall prepare a "Monthly Progress Summation" form from the month's accumulation of Daily Activity Reports, which shall be signed by both Contractor and Engineer.

H. These "Monthly Progress Summation" forms and material deliver/disposal manifests will provide the basis for the Owner's and/or the Engineer review and verification of monthly applications for payment submitted by Contractor.

1.3 SCOPE OF PAYMENT

A. Payments to Contractor will be made for the actual quantities of the Agreement items performed and accepted by the Owner in accordance with the Contract Documents. Upon completion of the Work, if these actual quantities show either an increase or decrease from the quantities given in the Bid Form, the Contract Unit Prices will still prevail, except as provided hereinafter.

B. Contractor shall accept in compensation, as herein provided, in full payment for furnishing all labor, materials, services, insurance, tools, taxes, equipment, temporary facilities and utilities, decontamination facilities and incidentals necessary to complete the Work and for performing all Work contemplated and embraced by the Agreement; also for all loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the Work, except as provided herein, also for all expenses incurred in consequence of the suspension of the Work as herein authorized.

C. The payment of any progress estimate or of any retained percentage except by and under the approved final invoice, in no way shall affect the obligation of the Contractor to repair or renew any defective parts of the construction or to be responsible for all damage due to such defects.

D. Unless otherwise approved by the Owner, payment in excess of any lump sum price items will not be made.

1.4 PAYMENT FOR INCREASED OR DECREASED QUANTITIES

A. Payment for increased or decreased quantities shall be in accordance with Section 00 70 00 – Standard Conditions.

B. Except as otherwise described herein, when alterations in the quantities of Work not requiring supplemental agreements, as herein provided for, are ordered and performed, Contractor shall accept payment in full at the Contract Price for the actual quantities of Work done. No allowance will be made for anticipated profits. Increased or decreased Work involving supplemental agreements will be paid for as stipulated in such agreements.

1.5 OMITTED ITEMS

A. Should any items contained in the Bid Form be found unnecessary for the proper completion of the Work contracted, Owner may eliminate such items from the Agreement, and such action shall in no way invalidate the Agreement, and no allowance will be made for items so eliminated in making final payment to Contractor.

1.6 PROGRESS PAYMENTS

A. Progress payments shall be made monthly as the Work progresses in accordance with the Agreement and Section 00 70 00 – Standard Conditions. All progress invoices and payments shall be subject to correction in the final quantity invoice and payment.

B. No monthly payment shall be required to be made when, in the judgment of Owner and/or the Engineer, the Work is not proceeding in accordance with the provisions of the Contract Documents, or when, in his judgment, the total value of the Work performed since the last payment amounts to less than $1,000.00.

C. A retainage of 10% (ten percent) will be made on all progress payments to secure satisfactory performance of the contractual Work.

1.7 PAYMENT FOR MATERIAL DELIVERED

A. Payment shall not be made for materials and equipment not incorporated into the Work.

B. No progress payment shall be made upon fuels, supplies, lumber, false Work, or other materials, or on temporary structures of any kind which are not a permanent part of the Agreement.

1.8 MEASUREMENT OF QUANTITIES

A. Measurement by Weight. The pay quantity shall be computed based on actual weight in the hauling vehicle. For each load and each type of material delivered or removed to/from the Site, the Contractor shall furnish to the Engineer a certified weight ticket from the supply or receiving facility. Certified weight tickets shall clearly and legibly indicate the date, material supplier or facility, project name, bid item number, material description (as defined in these Specifications), and weight of the material delivered. Payment will not be made

on items measured by weight for which a certified weight ticket has not been submitted.

B. Measurement by Volume. Measurement shall be based on the in-situ volume and final in-place dimensions as measured by Contractor's survey measurements consistent with the Specifications.

C. Measurement by Area. Measured by square dimensions using mean length and width or radius.

D. Measurement by Linear Measurement. Measured by linear dimension, at the item centerline or mean chord.

1.9 INCIDENTAL WORK

A. Incidental Work items for which separate payment is not measured include, but are not limited to, the following items:

1. All work plans and submittals not specifically included in the Contract Pay Items.
2. Cooperation with the Owner, Engineer, other contractors, abutting property owners and others.
3. Professional land surveyor services for identification of utility terminations and preparation of As-Built Drawings as described in the Specifications.
4. Obtaining, maintaining, and compliance with all required permits and notifications including any associated fees.
5. Testing of construction materials.
6. Project Record Documents.
7. Materials handling and management.
8. Contractor's health and safety program.
9. Disposal of all rubbish and trash.
10. Disposal of decontamination fluids.
11. Procurement and coordination of subcontractors.
12. Protecting and maintaining all existing utilities and structures as described in the Specifications and as shown on the Drawings.
13. Protecting, as necessary, all equipment and materials from adverse weather affects.

14. Snow plowing.

15. Maintaining the safety of operations at the Site during Work.

16. Compliance with all federal, State, and local regulations and requirements.

17. Site housekeeping/Clean-up.

18. All other Work indicated in these Contract Documents and not specifically listed among the Contract Payment Items described herein.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Contract Pay Items

B. Items and Basis for Measurement and Payment

3.2 CONTRACT PAY ITEMS

A. The purpose of this section is to define the method of measurement and payment for each of the items included on the Bid Form provided in Section 00 41 00 – Bid Form.

B. Contractor shall be carefully acquainted with all work associated with each payment item and shall have no claim for any unfamiliarity with the requirement of various items.

3.3 ITEMS AND BASIS FOR MEASUREMENT AND PAYMENT

The items described below and presented on the Bid Form constitute all items to be specifically paid under this Agreement.

A. GENERAL

Item No. 1 – Performance and Payment Bond

1. Work Included

Furnish performance and payment bonds consistent with Article 5.01 of Section 00 70 00 – Standard Conditions and Article 15 of Section 00 73 00 – Supplemental Conditions.

2. Measurement

The Work required for this item will be measured based on the receipt of the required performance and payment bonds.

3. Payment

Payment for this Lump-Sum item will be made subsequent to receipt of the required performance and payment bonds.

Item No. 2 –Work Plans and Submittals

1. Work Includes

Preparation of all Work Plans and Submittals required by these Specifications per Table A of Section 01 33 00 – Submittal Procedures and submission of Work Plans and Submittals consistent with the submission timeframes listed in Table A. All other submittals required by the Specifications but not specifically listed in Table A are considered incidental to this payment item.

2. Measurement

The Work required for this item will be measured on the basis of acceptance of all Work plans and Submittals by the Engineer as required by the Specifications.

3. Payment

Forty (40) percent of the Lump-Sum price for this item will be paid following Engineer approval of the Work Plan submittals that are due within 7 and 10 days after Notice to Proceed. Thirty (30) percent of this Lump Sum payment item will be made incrementally on a monthly basis based on estimated total monthly project duration, consistent with the Engineer- approved Project Work Plan and Progress Schedule. The final thirty (30) percent payment will be made upon Engineer approval of project closeout submittals in accordance with Specification Section 01 70 00 – Execution and Project Closeout Requirements.

Item No. 3 – Mobilization and Site Preparation

1. Work Included

   a. Office-Based Activities – This component of mobilization includes, but is not limited to, the following:

      1) Insurance.

      2) Identification and acquisition of all construction-related permits and notifications that may be necessary for the completion of the project.

      3) Procurement and coordination of subcontractors and equipment necessary to perform the Work.

      4) Compliance with all federal, State, and local regulations and requirements.

      5) All other office and administration services necessary to support the Contractor's activities for the duration of the project.

   b. Field-Based Activities – This component also includes several support/operational/maintenance activities required of Contractor during the execution of the Agreement including, but not limited to, the following:

      1) Mobilization of all personnel, equipment, and materials to the Site.

      2) Construction of material staging areas and decontamination pads.

      3) Clearing including off site disposal to Owner approved disposal/recycling facility.

      4) Construction of temporary work platforms and access roads.

      5) Utility clearance/protection/guarding.

2. Measurement

   The Work required for this item will be measured on the basis of satisfactory evidence of mobilization of sufficient labor, equipment, and material to adequately advance the Work.

3. Payment

   The Lump-Sum Price for Mobilization shall be payment for all labor, equipment, material, and other incidentals mobilized to the Site and

considered normal for administration of the Work. The Lump Sum Price is a one-time charge. Additional mobilization charges will not be allowed under this item. Payment will be made once the Contractor has physically occupied the Site, the pre-construction conference has been held, Work and material delivery schedules have been approved, permits and notifications have been obtained, sufficient labor, equipment and material to adequately progress the Work of this Agreement are in place, and the Contractor has started the Work. ***Payment for Mobilization is also contingent upon Engineer acceptance of Work Plan submittals due within 7 and 10 days after Notice to Proceed. In no case shall the value of this Bid item be greater than 10% of the total Bid price.***

Item No. 4 – Temporary Facilities and Controls

1. Work Included

All labor, equipment and materials required to perform the following:

a. Construction, maintenance, and subsequent removal of temporary facilities, controls, and utilities in accordance with Section 01 50 00 – Temporary Facilities and Controls.

b. Attendance at all project meetings per Section 01 31 19 – Project Meetings.

c. Site security, in accordance with Section 01 35 53 – Security Procedures.

d. Environmental protection in accordance with Section 01 35 43 – Environmental Procedures.

e. Decontamination of equipment, personnel and materials in accordance with Section 01 35 43.13 – Environmental Procedures for Hazardous Materials.

f. Traffic control in accordance with Section 01 55 26 – Traffic Control.

g. All labor, equipment and materials necessary to install and maintain temporary fencing as described in Section 32 31 13 – Fencing and as shown on the Drawings.

h. All labor, equipment and materials required to furnish, install, maintain and remove all erosion and sedimentation controls in accordance with Section 01 57 13 - Erosion and Sediment Control, all relevant permits and approvals, and as shown on the Drawings.

i. Dust, odor, vapor, vermin, and noise/vibration control and monitoring in accordance with Section 01 57 16 – Temporary Project Controls.

j. Maintain the safety of operations at the Site during Work.

2. Measurement

The Work required for this item will be measured on the basis of satisfactory installation, maintenance, and removal of temporary facilities and controls per the above referenced Specifications and Drawings.

3. Payment

Thirty (30) percent of the Lump-Sum price for this item will be paid with the first payment request following satisfactory evidence of temporary facilities and utilities installed. Fifty (50) percent of this Lump Sum payment item will be made incrementally on a monthly basis based on estimated total monthly project duration, consistent with the Engineer-approved Project Work Plan and Progress Schedule. The final twenty (20) percent payment will be made upon removal of all temporary facilities and utilities to the satisfaction of the Engineer.

Item No. 5 – Temporary Water Control and Cofferdam

1. Work Included

All labor, equipment, and materials required for safely diverting flow from the Upper Hockanum River through the raceway Work area including the installation and maintenance of a temporary cofferdam and bypass piping and pumping of standing water to insure that the raceway cover and dam are demolished and the new dam, slide gate, and appurtenant structures are constructed in-the-dry as indicated on the Drawings and in accordance with Section 01 50 10 – Temporary Water Control and Section 31 52 00 – Temporary Cofferdams. Work includes, but is not limited to, the following:

a. Implementation, operation, maintenance, and replacement (as necessary) of environmental and surface water diversion control measures to allow the Work to be performed in dry conditions as indicated on the Drawings and in accordance with Section 01 50 10 – Temporary Water Control and Section 31 52 00 – Temporary Cofferdams.

b. Install temporary diversion pipe (Contractor designed) to convey flow from Paper Mill Pond through the raceway Work area.

c. Phase the operation of the surface water control system to accommodate the concrete forming and construction of the weir and slide gate outlet structures and related structures (i.e. concrete apron and riprap).

d. Install controls to pump standing water to insure that the new dam, slide gate and appurtenant structures are constructed in-the-dry.

e. Have contingencies in place to temporarily demobilize the water controls and remove other equipment from the raceway, in the event of forecasts of rainfall/runoff that may exceed the discharge capacity of the Contractor's surface water diversion system.

f. Removal of water diversion controls upon written acceptance of the Work by the Engineer.

2. Measurement

The Work required for this item will be measured on the basis of satisfactory implementation, operation, maintenance, and replacement of the water control and cofferdam systems, including removal of such controls and restoration of the work area.

3. Payment

Payment for this Lump Sum item will be made consistent with the Engineer approved Schedule of Values.

Item No. 6 – Asbestos and Hazardous Material Removal and Disposal

1. Work Included

All labor, equipment, materials, inspections, and third party monitoring associated with removal, on-Site management, characterization, containerization, transportation, and off site disposal of asbestos-containing materials (ACMs) outlined in Table No. 1 – Confirmed Asbestos-Containing Materials and in accordance with Section 02 81 00 – Waste Management and Disposal and Section 02 82 00 - Asbestos Remediation and disposal/recycling of hazardous materials outlined in Table No. 2 – Hazardous Materials Inventory in accordance with Section 02 81 00 – Waste Management and Disposal and Section 02 84 00 – Hazardous Material Remediation, including, but not limited to the following:

a. Retain the services of a third party project monitor to provide monitoring of asbestos removal work practices and performance, inspection of the Work, bulk fiber identification, personal, perimeter, and clearance air sampling and analysis, and visual clearance inspections throughout the asbestos removal work.

b. Removal, characterization, on-Site management, containerization, transportation, and off site disposal at an Owner approved facility

all ACMs as identified in Table No. 1 – Confirmed Asbestos-Containing Materials as well as additional similar ACMs identified during the Work.

c. Removal, characterization, containerization, on-Site management, transportation, and off site disposal/recycling of items identified in Table No. 2 – Hazardous Materials Inventory and additional similar hazardous materials encountered during the Work to an Owner approved facility.

d. Implementation of environmental controls, storm water controls, spill controls, safety procedures and controls, and equipment required to access and remove identified ACMs and hazardous materials.

e. Secure temporary staging area for containerized ACMs and hazardous materials prior to transportation off site.

f. Loading of ACMs and hazardous materials into transport vehicles.

g. Inspection and cleaning of transport vehicles prior to their departure from the Site.

h. Preparation and submittal of a daily summary sheet that indicates the date, load number, truck ID number, time of departure from the Site, and copy of signed bill of lading and/or manifests.

2. Measurement

The work required for this item will be measured on the basis of satisfactory removal, containerization, on-Site management, transportation, and off site disposal of all ACMs identified in Table No. 1 – Confirmed Asbestos-Containing Materials as well as all other similar ACMs identified during the Work and receipt of certified disposal documentation from the Owner approved disposal facility as well as all hazardous materials identified in Table No. 2 – Hazardous Materials Inventory and additional similar hazardous materials encountered during the Work to an Owner approved facility.

3. Payment

Payment for Lump Sum items will be made consistent with the Engineer approved Schedule of Values.

Item No. 7 – Demolition

Work Included

1. All labor, equipment, and materials associated with complete demolition, removal and off site disposal/recycling to Owner approved facilities of Site structures and features indicated on the Drawings and in accordance with Section 01 50 10 – Temporary Water Control, Section 02 41 00 – Demolition, Section 02 81 00 – Waste Management and Disposal, and Section 02 82 00 – Asbestos Remediation. Work includes, but is not limited to, the following:

    a. Paying for, obtaining, and complying with all permits and notifications from the State of Connecticut, federal agencies, and the Town of Vernon.

    b. Protection of abutting properties, structures, active overhead and underground utilities, and public and private ways, including, but not limited to temporary shoring, bracing, scaffolding, debris nets, and/or other devices.

    c. Capping all existing floor drains and openings prior to demolition to protect drains from being impacted by run-off from the demolition.

    d. Identification, termination, capping, and/or removal of all utilities associated with Site buildings and features to be demolished and additional other utilities as required to isolate utilities from the buildings to be demolished and to obtain demolition permit sign-off. Work includes restoration of all utility abandonment areas consistent with the requirements of the utility and the Town of Vernon.

    e. Implementation of environmental controls, stormwater controls, spill controls, safety procedures and controls, and equipment required to complete demolition.

    f. Confirmation of the absence/presence of residual liquids in all piping prior to demolition. Remove, containerize, and dispose off site all residual liquids that may be present in piping. If present, compensation for residual liquid removal, containerization, and disposal will be provided by payment items C2 and C3.

    g. Demolition of Buildings 2, 5 (roof and interior only as ACM), 6 (interior only), 7, 8, 13, 14, AST Building, Boiler Room 2, Skyway 2, fiberglass boiler stack, raceway top/cover, raceway dam and flow control equipment, retaining walls, floor slabs, foundation walls, asphalt, landscaping, certain utilities (overhead and underground), ramps, poles, bollards, and fencing in the sequence indicated on the Drawings.

h. Provide temporary water control prior to demolition of the raceway cover/top and dam in accordance with Section 01 50 10 – Temporary Water Control.

i. Separation of buildings and structures to be demolished from buildings to remain including temporary bracing (if needed) in accordance with local requirements and as specified in Section 02 41 00 – Demolition and as shown on the Drawings.

j. Segregation, management, testing, loading, off site disposal/recycling, and/or salvage of demolition debris, solid waste, PCB impacted demolition debris, petroleum impacted wood flooring, asphalt, and steel to an Owner approved facility in accordance with Section 02 41 00 – Demolition and Section 02 81 00 – Waste Management and Disposal.

k. Fracture floor slabs to remain in Building 14 as indicated in the Drawings, in accordance with Section 02 41 00 - Demolition and to the satisfaction of the Engineer.

l. Seal all openings, wall, and floor penetrations newly exposed during the demolition activities in accordance with Section 07 10 00 – Weather Proofing.

m. Cap the concrete inlet to raceway diversion pipe prior to re-introduction of flow to raceway in accordance with Section 02 41 00 – Demolition.

n. Segregation, management, and on-Site processing/crushing of brick and concrete for reuse to 3-inch minus for reuse as on-Site fill. Work includes removal of reinforcing steel.

o. Secure temporary staging area for containerization and/or stockpiling of demolition debris prior to transportation off site.

p. Loading of demolition debris into transport containers or vehicles.

q. Inspection and cleaning of transport vehicles prior to their departure from the Site.

r. Preparation and submittal of a daily summary sheet that indicates the date, load number, truck ID number, time of departure from the Site, gross weight, tare weight, net load weight, and copy of signed bill of lading and/or manifests.

2. Measurement

The Work required for this item will be measured on the basis of satisfactory demolition of all identified features, on-Site processing of materials for reuse, sealing of all newly exposed building openings and penetrations, and off site disposal of all demolition debris to Owner approved disposal/recycling facilities.

3. Payment

Payment for this Lump Sum item will be made consistent with the Engineer approved Schedule of Values.

Item No. 8 – Weather Proofing Roofs

1. Work Included

All labor, equipment, and materials necessary to render the roofs of Buildings 1, 3, 4, 6, 9, 11, 12, and Sky Way 1 weather proof in accordance with local requirements and Section 07 10 00 – Weather Proofing. Work includes, but is not limited to:

a. Weather proofing the damaged Building 1, 3, 4, 6, 9, 11, and 12 roof areas identified on the Drawings.

b. Weather proofing additional openings in the roofs of Buildings 1, 3, 4, 6, 9, 11, 12 and skyway resulting from building demolition separation Work including removal of the fiberglass boiler stack.

c. Weather proofing all additional roof openings in building structures to remain as identified by the Engineer.

2. Measurement

The Work required for this item shall be measured on a per square foot basis based on satisfactory evidence of rendering the roofs of the remaining buildings weather proof.

3. Payment

Payment shall be made for the actual square footage of roof weather proofing performed and acceptance of Work by the Engineer.

Item No. 9 – Concrete Dam and Slide Gate

1. Work Included

All labor, equipment, and materials associated with construction of a new dam and certain raceway improvements as indicated on the Drawings and in accordance with Section 03 30 00 – Reinforced Cast In-Place Concrete, Section 05 30 00 – Metal Decking, Section 05 52 13 – Pipe and Tube Railings, Section 31 00 00 – Earthwork, Section 31 05 13 – Soils and Aggregate for Earthwork, Section 31 37 00 – Stone and Riprap, and Section 40 05 59 – Slide Gate. Work includes, but is not limited to, the following:

a. Complying with the requirements of all federal and State permits and approvals obtained by the Owner.

b. Construction of a concrete gravity dam equipped with a weir in the location indicated on the Drawings and in accordance with Section 03 30 00 – Reinforced Cast In-Place Concrete.

c. Construction of a concrete apron on the downgradient side of the dam as indicated on the Drawings and in accordance with Section 03 30 00 – Reinforced Cast In-Place Concrete, Section 31 37 00 - Stone and Riprap and Section 31 05 13 – Soils and Aggregate for Earthwork.

d. Performance of concrete and reinforcing steel testing and inspections to meet the requirements specified in Section 03 30 00 – Reinforced Cast In-Place Concrete.

e. Supply and installation of scour protection (rip-rap) in the areas indicated on the Drawings and in accordance with Section 31 37 00 – Stone and Riprap.

f. Supply, fabrication, and installation of a 4'x 4' cast iron sluice gate with stem, mechanical hoist, and accessories as part of a low level outlet structure. The outlet structure will also consist of a reinforced concrete structure including metal decking and pipe safety railing. The construction of the gate and outlet structure shall be executed as indicated on the Drawings and in accordance with Section 03 30 00 – Reinforced Cast In-Place Concrete, Section 05 30 00 – Metal Decking, Section 05 52 13 – Pipe and Tube Railing, and Section 40 05 59 – Slide Gate.

h. Removal, segregation, on-Site management, characterization, transportation, and off site disposal of all existing soil and debris generated during installation of the concrete dam and slide gate to an Owner approved facility in accordance with Section 02 81 00 – Waste Management and Disposal.

2. Measurement

The Work required for this item will be measured on the basis of satisfactory construction of the new dam and appurtenant structures including the testing and operation of the slide gate.

3. Payment

Payment for this Lump Sum item will be made consistent with the Engineer approved Schedule of Values and acceptance of the Work by the Engineer.

Item No. 10 – In-Filling/Repointing Raceway Walls

1. Work Included

   All labor, equipment, and materials necessary to in-fill/repoint the existing walls of the raceway, including, but not limited to, filling exposed internal voids with grout, cleaning and raking all joints of the existing masonry, and replacing the surface mortar in all stone masonry joints as indicated on the Drawings and in accordance with Section 04 05 00 – Repair of Stone Masonry Walls.

2. Measurement

   The Work required for this item shall be measured on a per square foot basis based on satisfactory evidence of in-filling/repointing the existing raceway walls.

3. Payment

   Payment shall be made for the actual square footage of in-filling/repointing performed and acceptance of Work by the Engineer.

Item No. 11 – Import and Placement of Free Draining Materials

1. Work Included

   All labor, equipment, and materials associated with furnishing, placing, grading, and compacting Free Draining Material as directed by the Engineer.

2. Measurement

   The measurement for payment shall be the number of tons of actual Free Draining Material measured on the basis of deliverance and acceptance at the Site. Delivery has been completed when material has been placed, graded and compacted and accepted by the Engineer and weight scale receipts for the material have been submitted by the Contractor.

3. Payment

   Payment shall be made for the actual number of tons of Free Draining Material delivered and accepted by the Engineer. Payment shall be made upon acceptance and submittal of weigh scale receipts for the material.

Item No. 12 – Site Restoration

1. Work Included

Furnish all labor, equipment and materials necessary for the performance of Site restoration activities, including, but not limited to, the following:

a. Restoration of all surfaces to grades described in the Specifications and shown on the Drawings.

b. Backfill, grade, and compact surface depressions remaining after the demolition including foundation, slab, pit, and basement areas with processed building materials or Free Draining Material (as approved by the Engineer). This includes areas disturbed during the placement and removal of erosion and sediment controls.

c. Supply and installation of 6-inches of topsoil in the areas indicated on the Drawings and in accordance with Section 32 90 00 – Landscaped Work.

d. Supply and application of fertilizers, lime, grass seed, and wood fiber mulch in the areas indicated on the Drawings and in accordance with Section 32 90 00 – Landscaped Work.

e. Supply and installation of Jute Netting in accordance with Section 32 90 00 – Landscaped Work.

f. Construction of a concrete cap on the top of the raceway walls as indicated on the Drawings and in accordance with Section 03 30 00 – Reinforced Cast In-Place Concrete.

g. Installation of asphalt curbing along the south side of Brooklyn Street as indicated on the Drawings and in accordance with Section 32 90 00 – Landscaped Work.

h. Installation of metal guardrails on the north and south sides of the Brooklyn Street bridge over the raceway as indicated on the Drawings in accordance with Section 32 31 13 – Fencing.

i. Installation of new 6-foot high galvanized chain link as indicated on the Drawings in accordance with Section 32 31 13 – Fencing.

j. Secure/weather proof existing windows and doors on the remaining buildings in accordance with Section 07 10 00 – Weather Proofing and Table 3.

2. Measurement

The Work required for this item will be measured on the basis of satisfactory evidence Site restoration has been completed.

3. Payment

Payment for this Lump Sum item will be made consistent with the Engineer approved Schedule of Values and acceptance of Work by the Engineer.

Item No. 13 – Final Clean-up and Demobilization

1. Work Included

All labor, equipment and materials necessary for the performance of Site clean-up activities and demobilization including but not limited to, the following:

a. Removal of all equipment, materials, and debris/solid waste in accordance with Section 01 74 00 – Final Cleaning.

b. Demobilization of personnel, equipment (including cleaning), and materials from the Site.

c. Contract Closeout in accordance with Section 01 70 00 – Execution and Project Closeout Requirements.

d. Project Final Clean-Up in accordance with Section 01 74 00 – Final Cleaning.

e. Maintain the safety of operations at the Site during Work.

2. Measurement

The Work required for this item will be measured on the basis of satisfactory evidence that Site clean-up and demobilization has been completed, including but not limited to the following:

a. Demobilization of workers, equipment, and materials from the Site.

b. Removal of temporary utilities.

c. Removal of sanitary facilities.

d. Removal of traffic control devices.

e. Provision of Record Drawings and documents.

f. Warranties (not otherwise included in other Bid Items).

3. Payment

The Lump-Sum Price for Site clean-up and demobilization shall be full compensation for the removal of all labor, material, equipment and other incidentals required to comply with the Drawings and Specifications.

CONTINGENCY ITEMS

Item No. C1 – Non-Hazardous Soil Off-Site Transportation and Disposal (Thermal Treatment or Landfill)

1. Work Included

All labor, equipment, and materials necessary to characterize, handle, manage, load, transport, and dispose off-Site excess non-hazardous soil generated during the Work to an Owner-approved thermal treatment or landfill disposal facility consistent with the requirements of Section 02 81 00 – Waste Management and Disposal, including but not limited to:

a. Perform all Work in accordance with all applicable laws and regulations.

b. On-Site stabilization of any saturated soils to allow off-Site transportation of excavated materials and to meet requirements of the disposal facility.

c. All laboratory testing as necessary for waste characterization, handling, transportation, and disposal at the Owner-approved disposal facility.

d. Preparation of the waste profiles, Bills of Lading (BOLs), manifests, and other shipping documents. The Owner will sign all necessary waste profiles and shipping documents as the Generator.

e. Contract directly with the Owner-approved facility for the off-Site disposal of excess non-hazardous soil generated during the Work. Off-site disposal includes, but is not limited to, all tipping fees, State, local and federal taxes, fuel, tolls, and facility surcharges.

f. Loading and transportation of excess non-hazardous soil to Owner approved disposal facility.

g. Preparation and submittal of a daily summary sheet that indicates the date, load number, truck number, time of departure from the Site, time of return to the Site, gross weight, tare weight, net load weight, and copy of a signed bill of lading and/or manifest.

h. Tracking the amounts of excess non-hazardous soil transported and disposed off-Site.

2. Measurement

Measurement for payment shall be the actual number of tons of soil, measured on the basis of satisfactory evidence of the legal disposal at the Owner approved facility. Measurement of tons shall be based on certified weight receipts from the Owner approved facility.

3. Payment

Payment shall be made for the actual number of tons of soil properly transported and disposed at the Owner approved facility based on certified weight scale receipts from the Owner approved facility.

Item No. C2 - Non-Hazardous Liquids Collection, Transport and Disposal (minimum 10,000 Gallons)

1. Work Included

All labor, equipment, and materials necessary to handle, manage, containerize, characterize, pump, load, transport, and dispose off site at an Owner approved facility, all non-hazardous liquids generated during the Work, including, but not limited to, residuals in piping. This work shall be performed consistent with the requirements of Section 01 35 43 – Environmental Procedures, Section 01 35 43.13 – Environmental Procedures for Hazardous Materials, Section 01 50 00 – Temporary Facilities and Controls, Section 02 41 00 – Demolition, Section 02 81 00 – Waste Management and Disposal, Section 02 82 00 - Asbestos Remediation, and Section 02 84 00 - Hazardous Material Remediation, including, but not limited to, the following:

a. Preparation of all required profiles, manifests and shipping documents. Owner will sign as the waste generator.

b. Properly containerizing all liquids for on-Site storage and subsequent off site disposal.

c. Sampling and analytical testing of collected liquids as required by the Owner-approved disposal facility.

d. Loading into transport vehicles.

e. Transporting and disposing of collected liquids at an Owner approved facility.

f. All required tipping fees and State, local and federal taxes.

g. Maintaining the safety of operations at the Site during Work.

h. Preparing and submitting a daily summary sheet that indicates the date, load number, truck number, time of departure from the Site, gross weight, tare weight, net load weight, copy of a signed bill of lading and/or manifest, and hazardous material status.

2. Measurement

The Work required for this item shall be measured per gallon based on satisfactory evidence of legal disposal at an Owner-approved facility as documented by the certified gallonage ticket from the Owner-approved disposal facility.

3. Payment

Payment will be made for the actual number of gallons of non-hazardous waste liquids transported and disposed of as measured and certified at the Owner-approved disposal facility.

Item No. C3 - Hazardous Liquids Collection, Transport and Disposal (minimum 5,000 Gallons)

1. Work Included

All labor, equipment, and materials necessary to handle, manage, containerize, characterize, pump, load, transport, and dispose off site at an Owner approved facility, all hazardous liquids generated during the Work, including but not limited to, residuals in piping. This work shall be performed consistent with the requirements of Section 01 35 43 – Environmental Procedures, Section 01 35 43.l3 – Environmental Procedures for Hazardous Materials, Section 01 50 00 – Temporary Facilities and Controls, Section 02 41 00 – Demolition, Section 02 81 00 – Waste Management and Disposal, Section 02 82 00 - Asbestos Remediation, and Section 02 84 00 - Hazardous Material Remediation, including, but not limited to, the following:

a. Preparation of all required profiles, manifests and shipping documents. Owner will sign as the waste generator.

b. Properly containerizing all liquids for on-Site storage and subsequent off site disposal.

c. Sampling and analytical testing of collected liquid as required by the Owner-approved disposal facility.

d. Loading into transport vehicles.

e. Transporting and disposing of collected liquid at an Owner approved facility.

f. All required tipping fees and State, local and federal taxes.

g. Maintaining the safety of operations at the Site during Work.

h. Preparing and submitting a daily summary sheet that indicates the date, load number, truck number, time of departure from the Site, gross weight, tare weight, net load weight, copy of a signed bill of lading and/or manifest, and hazardous material status.

2. Measurement

The Work required for this item shall be measured per gallon based on satisfactory evidence of legal disposal at an Owner-approved facility as documented by the certified gallonage ticket from the Owner-approved disposal facility.

3. Payment

Payment will be made for the actual number of gallons of hazardous waste liquids transported and disposed of as measured and certified at the Owner-approved disposal facility.

Item No. C4 - Asbestos Removal and Disposal

1. Work Included

The following applies to all Payment Item No. C4 categories:

All labor, equipment, materials, inspections, and third party monitoring associated with removal, on-Site management, characterization, containerization, transportation, and off site disposal of asbestos-containing materials (ACMs) outlined in Table No. 1A – Confirmed Asbestos-Containing Materials (Contingency Bid Items) in accordance with Section 02 81 00 – Waste Management and Disposal and Section 02 82 00 - Asbestos Remediation, including but not limited to, the following:

a. Preparation of a CTDPH Asbestos Start Work Notification 10 working days prior to the commencement of asbestos abatement activities as well as Application for Alternative Work Practices (if needed).

b. Retain the services of a third party project monitor to provide monitoring of asbestos removal work practices and performance, inspection of the Work, bulk fiber identification, personal, perimeter,

and clearance air sampling and analysis, and visual clearance inspections throughout the asbestos removal work.

c. Removal, characterization, on-Site management, containerization, transportation, and off site disposal at an Owner approved facility of all interior ACMs as identified in Table No. 1A – Confirmed Asbestos-Containing Materials (Contingency Bid Items) as well as additional similar interior ACMs identified during the Work.

d. Implementation of environmental controls, storm water controls, spill controls, safety procedures and controls, and equipment required to access and remove identified ACMs.

e. Secure temporary staging area for containerized ACMs prior to transportation off site.

f. Loading of ACMs into transport vehicles.

g. Inspection and cleaning of transport vehicles prior to their departure from the Site.

h. Preparation and submittal of a daily summary sheet that indicates the date, load number, truck ID number, time of departure from the Site, and copy of signed bill of lading and/or manifests.

2. Measurement

The work required for this item will be measured on the basis of satisfactory preparation of CTDPH Asbestos Start Work Notification 10 working days prior to the commencement of asbestos abatement activities as well as Application for Alternative Work Practices (if needed), removal, containerization, on-Site management, transportation, and off site disposal of all interior ACMs identified in Table No. 1A – Confirmed Asbestos-Containing Materials (Contingency Bid Items) as well as all other similar interior ACMs identified during the Work and receipt of certified disposal documentation from the Owner approved disposal facility.

3. Payment

Payment for Lump Sum items will be made consistent with the Engineer approved Schedule of Values.

Item No. C4a – Building No. 1

Removal, characterization, containerization, on-Site management, transportation, and off site disposal of interior ACM from Building 1.

Item No. C4b – Building No. 3

Removal, characterization, containerization, on-Site management, transportation, and off site disposal of interior ACM from Building 3.

Item No. C4c – Building No. 4

Removal, characterization, containerization, on-Site management, transportation, and off site disposal of interior ACM from Building 4.

Item No. C4d – Building No. 9

Removal, characterization, containerization, on-Site management, transportation, and off site disposal of interior ACM from Building 9.

Item No. C4e – Building No. 11

Removal, characterization, containerization, on-Site management, transportation, and off site disposal of interior ACM from Building 11.

Item No. C4f – Building No. 12

Removal, characterization, containerization, on-Site management, transportation, and off site disposal of interior ACM from Building 12 and Skyway #1.

END OF SECTION

SECTION 01 13 19 - PROJECT MEETINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Pre-Construction Meeting/Initial Conference

C. Weekly Construction Period Meetings

D. Construction Progress Reporting

E. Close-Out Meeting

F. Contact Information

1.2 RELATED SECTIONS

A. Section 01 11 13 – Work Covered by Contract Documents

1.3 PRE-CONSTRUCTION MEETING/INITIAL CONFERENCE

A. Engineer will schedule and conduct one pre-construction meeting prior to the commencement of any Work at the Site, to which interested agencies and utility companies will be invited to discuss their interests and requirements relating to the project. At a minimum, Contractor and all key subcontractors shall attend the meeting, which will be held at the Site or the Town of Vernon offices located at 55 West Main Street in Vernon, Connecticut. The Engineer will prepare and distribute an agenda for this Pre-Construction Meeting/Initial Conference and will also prepare the meeting summary/minutes.

B. ANTICIPATED AGENDA:

1. Submission of executed bonds and insurance certificates.
2. Distribution of Contract Documents.
3. Submission of list of subcontractors, list of products, schedule of values, progress schedule, example of weekly progress meeting agenda and minutes, and example of daily reports.
4. Designation of personnel representing parties in Contract and Engineer.
5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
6. Permits and approval status.

7. Sequence of work and schedule.
8. Health and safety requirements.
9. Use of premises by Owner and Contractor.
10. Construction facilities and controls.
11. Temporary utilities.
12. Application for payment procedures.
13. Communications.
14. Interactions with Media, Regulators and the Public.

C. Engineer will record minutes and distribute copies to participants within five business days after meeting.

1.4 WEEKLY CONSTRUCTION PERIOD MEETINGS

A. On-Site representatives of the Contractor, key subcontractors and the Engineer shall attend weekly meetings during the Work. The Contractor shall be responsible for developing the weekly meeting agenda, which at a minimum shall include, project status, scope of work, health and safety items, outstanding issues, project implementation issues, overall schedule in Gantt format, work completed during the previous week, upcoming work for the following week, and general status of the project. Owner may also elect to attend weekly construction meetings. These weekly meetings shall be attended by, at a minimum, the Contractor, the Contractor's SSHO, and key subcontractors.

B. Contractor shall provide the Engineer with a draft of the weekly meeting minutes by 10:00 AM the following work day. Engineer will review the draft and provide comments/edits to the Contractor. Contractor shall modify and distribute a final version of the meeting minutes to the Owner and Engineer prior to the subsequent weekly meeting.

1.5 CONSTRUCTION PROGRESS REPORTING

A. Contractor shall review the progress and quality of the Work on a daily basis and shall prepare and submit to Engineer each day a Daily Activity Report described herein. In addition, within three days from the end of each month, Contractor shall prepare and submit to Engineer a Monthly Progress Summation Form prepared based on these Daily Activity Reports.

B. At a minimum, these Daily Activity Reports shall include the following information and shall be submitted to Engineer by the end of the following workday:

1. Project name.
2. Date.

3. Author of report.
4. Weather conditions including wind, precipitation and temperature.
5. Personnel and equipment on-Site including a listing of all subcontractors and suppliers, and sign-in logs for employees, subcontractors, and visitors, including regulatory agencies and/or testing and inspection entities.
6. Documentation of daily Health and Safety briefings, daily health and safety toolbox topics and applicable Job Site Analyses, and summary of all Health and Safety monitoring data.
7. Materials and equipment delivered, utilized and/or stored on-Site, and demobilized.
8. Summary of Work performed.
9. Types of wastes, transporter, disposal facility, number of transport vehicles, and estimated quantities of waste transported off site for disposal/ recycling.
10. All quantities of Work performed. For those requiring subsequent measurement or survey, these quantities shall be estimated for the purposes of these reports.

1.6 CLOSE-OUT MEETING

A. Engineer will schedule and conduct one project close-out meeting with the Contractor prior to the demobilization of the Contractor from the Site. Contractor and all key subcontractors shall attend. Owner may also elect to attend this meeting.

1.7 CONTACT INFORMATION

A. Contractor shall establish and maintain contact information including email addresses for the Contractor's project managers and project Site superintendents. The Contractor's project manager and site superintendent shall have available and maintain phone, email and internet access at the Site.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Summary

B. Submittal Requirements

C. Submittal Review

D. Work Plans

E. Shop Drawing Samples

F. Test Results and Certification

G. Submittal Register

1.2 SUMMARY

A. This Section includes requirements for administrative and Work related submittals such as progress schedules, work plans, shop drawings, test results, construction photographs, waste disposal documentation, and other submittals required by the Contract Documents.

B. Contractor shall submit required materials for the Engineer's review in accordance with the Agreement and Section 00 70 00 – Standard Conditions. The Submittal List (Table A) includes a Schedule of Submittals that is required to be submitted following issuance of the Notice to Proceed.

1.3 SUBMITTAL REQUIREMENTS

A. Required submittals are listed in Table A - Submittal List at the end of this Section.

B. Deliver the required copies of the submittals to the Owner and Engineer within the required time frames.

C. Contractor shall submit by electronic mail, or if not possible, deliver paper copies of the required submittals to the Owner and Engineer in accordance with the following:

1. Provide a separate submittal for each Specification requiring submittals. Where multiple Specifications relate to the same

system or element and are being provided from the same source, a single combined submittal is acceptable.

2. Coordinate submission of related items. Group submittals of related products in a single transmission.

3. Include all submittal material requested for each Specification.

4. Identify variations from requirements of Contract Documents. State product and system limitations which may adversely affect Work.

5. Mark or show dimensions and values in same units as specified.

B. The Engineer's review will only be for compliance with the design concept of the project and for compliance with the information given in the Contract Documents, not extending to means, methods, techniques, sequences, or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents), or to standards, codes, or regulations, or to safety precautions or programs incident thereto.

C. The Contractor shall plan a submittal schedule to include an Engineer review period of 5 days for each pre-construction submittal or revision thereof, and two days for all other submittals of revision thereof. All pre-construction submittals shall be submitted in one package. Revisions shall be submitted in redline/strikeout.

D. The Contractor must adhere to approved submittals; deviation from the approved submittals must be pre-approved by the Engineer in writing.

E. Contractor responsibilities:

1. Review submittals prior to transmittal. Verify compatibility with field conditions and dimensions, product selections and designations, quantities, and conformance of submittal with requirements of the Contract Documents. Return non-conforming submittals to the preparer for revision rather than submitting for review by the Engineer.

2. Coordinate submittals to avoid conflicts between various items of Work.

3. Submittal transmittal form: Include with each submittal a transmittal form which clearly identifies the submittal name, Specification section name and number, preparer, and date submitted. Each submittal form shall also include a unique tracking number.

4. Incomplete, improperly packaged, and submittals from sources other than Contractor will not be accepted.

5. For each submittal, Contractor must clearly identify any proposed substitutions for materials or modifications to the procedures specified in the Contract Documents.

H. Transmittal: Where possible, transmit all submittals electronically via electronic mail. Where electronic submittal is not possible, submit 3 paper copies for Engineer review.

I. Re-submission:

1. Revise and re-submit submittals as required within 5 days of return from initial review.

2. Make re-submittals under procedures specified for initial submittals.

3. Identify all changes made since previous submittal.

4. Re-submittals shall include the original tracking number with a letter designation such as “A” for the first re-submittal or “B” for a second re-submittal.

1.4 SUBMITTAL REVIEW

A. Engineer will review submittals for sole purpose of verifying general conformance with design intent and compliance with Contract Documents. Approval of submittal by Engineer does not relieve Contractor of responsibility for correcting errors which may exist in a submittal or from meeting the requirements of the Contract Documents.

B. Review time: Initial review will be performed by the Engineer within 5 days of receipt. Engineer reserves right to withhold action on a submittal that requires review of related submittals before said submittal can be approved until related submittals are received. Additional time will be required if processing must be delayed to permit review of related subsequent submittals.

C. Review actions: After review, Engineer will return submittals marked as follows to indicate action taken:

1. Approved: Part of Work covered by submittal may proceed provided it complies with requirements of Contract Documents. Final acceptance will depend upon that compliance. The term “Approved” shall only indicate that there is no exception taken to the submittal.

2. Approved except as noted: Part of Work covered by submittal may proceed provided it complies with notations and corrections on submittal and requirements of Contract Documents. Final acceptance will depend upon that compliance.

3. Not approved, revise and resubmit: Do not proceed with part of Work covered by submittal including purchasing, fabricating, and delivering. Revise or prepare new submittal in accordance with notations and resubmit.

D. The Contractor must adhere to approved submittals; deviations from the approved submittals must be pre-approved by the Engineer in writing. After submittals have been approved by the Engineer, no re-submittal for the purpose of substituting materials or equipment will be given consideration unless accompanied by an explanation as to why a substitution is necessary.

E. Submittals processed by the Engineer do not become Contract Documents and are not to be considered Change Orders; the purpose of a submittal review is to establish a reporting procedure and is intended for the Contractor's convenience in organizing the work and to permit the Engineer to monitor the Contractor's progress and understanding of the design. Review, acceptance, or approval of submittals shall not add to the Contract amount and additional costs which may result shall be solely the obligation of the Contractor.

F. The Engineer may request submittals in addition to those listed when deemed necessary to adequately describe the work covered in the respective sections.

G. The Contractor shall direct inquiries to the Engineer regarding the procedure, purpose, or extent of any submittal if clarifications are required prior to submittal to avoid delays in approval.

H. Submittals requiring Engineer approval shall be scheduled and made prior to acquisition of the material or equipment covered thereby or before any work described is initiated. No delays, damages, or time extensions will be allowed for time lost in late submittals.

1.5 WORK PLANS

A. The Contractor shall prepare and submit an electronic copy of the required plans as listed in Table A to the Owner and Engineer for review within the timeframe indicated on Table A.

B. Work relevant to the individual plans shall not be performed until the plan has been approved by the Engineer.

C. Each section of each plan shall be indexed separately and referenced by a Table of Contents and all pages shall be numbered.

1.6 SHOP DRAWINGS AND SAMPLES

A. Shop Drawings, product data, and samples shall be submitted by the Contractor as required in individual specification sections and summarized in Table A – Submittal List included at the end of this Specification.

B. Where required by Specifications or otherwise needed, the Contractor shall prepare drawings illustrating the portion of Work for use in fabricating, interfacing with other work, and installing products. Drawings shall not be reproduced and submitted as Shop Drawings.

C. Electronic Format:

1. Size printable to: 8-1/2 by 11 inches minimum and 24 by 36 inches maximum.
2. Present in a clear and thorough manner. Title each drawing with Project name. Identify each element of drawing with reference number.

D. The Contractor's Responsibilities:

1. Review Shop Drawings, product data, and samples prior to submittal.
2. Determine and verify:
    a. Field measurements
    b. Field construction criteria
    c. Catalog numbers and similar data
    d. Conformance with Specifications
3. Coordinate each submittal with requirements of the Work and Contract Documents
4. Notify the Engineer in writing, at the time of the submittal, of deviations from requirements of Contract Documents
5. Begin no fabrication or Work requiring the submittals until return of the submittals with the Engineer's approval/comments

6. Designate in the construction progress schedule, dates for submittal and receipt of reviewed Shop Drawings and samples

E. Submittals shall contain:

1. Date of submittal and dates of previous submittals

2. Project title and number

3. Contract identification

4. Names of:

   a. The Contractor(s)

   b. Supplier

   c. Manufacturer

5. Summary of items contained in the submittal

6. Identification of the product with identification numbers, and the Drawing and Specification section numbers

7. Clearly identified field dimensions

8. Details required on the Drawings and in the Specifications

9. Manufacturer, model number, dimensions, and clearances, where applicable

10. Relation to adjacent or critical features of the Work or materials

11. Applicable standards, such as ASTM or Federal Specification numbers

12. Identification of deviations from Contract Documents

13. Identification of revisions on re-submittals

14. The Contractor's stamp, signed, certifying to review of the submittal, verification of the products, field measurements, field construction criteria, and coordination of information within the submittal with requirements of Work and Contract Documents.

F. Re-submittal Requirements:

1. Corrections or changes in submittals required by the Owner or Engineer. Re-submittals are required until all comments by the Owner or Engineer are addressed. All changes made in the re-

submittal must be documented and must also indicate any changes made other than those requested by the Owner or Engineer.

a. Revisions will be submitted in redline/strikeout for review. Final approved submittals shall be provided without redline/strikeout.

2. Shop Drawings and Product Data:

a. Revise initial drawings or data and resubmit as specified for initial submittal

b. Indicate changes made other than those requested by the Owner or Engineer

G. Distribute reproductions of Shop Drawings and copies of product data which have been accepted by the Owner to the following files:

1. Job site file

2. Record documents file

1.7 TEST RESULTS AND CERTIFICATION

A. Backfill materials shall be tested in accordance with testing requirements and schedule included in Section 31 05 13 – Soils and Aggregate for Earthwork.

B. Concrete and reinforcing steel shall be tested and inspected in accordance with requirements and schedule included in Section 03 30 00 – Reinforced Cast-In-Place Concrete.

C. Disposal material characterization sampling results shall be submitted along with proposed disposal/recycling facility acceptance criteria prior to transport of material off Site in accordance with Section 02 81 00 – Waste Management and Disposal.

D. Dust, odor, organic vapor, and noise/vibration monitoring results in accordance with Section 01 57 16 – Temporary Project Controls.

E. Asbestos perimeter air and work area clearance results in accordance with Section 02 82 00 – Asbestos Remediation.

F. Certification test results and certification of products shall be submitted for review so they may be included in the project record.

1.8 SUBMITTAL REGISTER

A. The Contractor shall provide a submittal register outlining required submittals as listed in Table A – Submittal List. The submittal register shall include dates of submittals and re-submittals as well as a corresponding identification number for each submittal. An updated

submittal register shall be submitted with each submittal and re-submittal document.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

TABLE A - SUBMITTAL LIST

The following represents the list of project submittals. If additional submittals are identified in the Contract Bid Documents, they should be brought to the attention of Owner and Engineer.

Submittal	Submittal Timeframe	Reference Section(s)
CHRO Affirmative Action Plan	Within 10 days of Notice of Award	Article 20 of Section 00 73 00 – Supplemental Conditions
Schedule of Submittals	Within 10 days after NTP	Article 2.05 of Section 00 70 00 – Standard Conditions
Schedule of Values	Within 10 days after NTP	Article 2.05 of Section 00 70 00 – Standard Conditions
Certificates of Insurance	Within 10 days after NTP	Article 5.03 of Section 00 70 00 – Standard Conditions and Article 17 of Section 00 73 00 – Supplemental Conditions
Performance and Payment Bonds	Within 10 days after NTP	Article 5.01 of Section 00 70 00 – Standard Conditions and Article 15 of Section 00 73 00 – Supplemental Conditions
Preliminary Progress Schedule	With Bid	00 21 13
Progress Schedule	Within 10 days after NTP	Article 2.05 of Section 00 70 00 – Standard Conditions
Application for Progress Payment	At least 5 days before the established date for each progress payment but not more often than once a month	Article 14.02 of Section 00 70 00 – Standard Conditions

Submittal	Submittal Timeframe	Reference Section(s)
Health and Safety Plan	Within 10 days after NTP	01 35 29
CTDPH Application for Alternative Work Practices (if needed) and 10 Day Asbestos Start Work Notification	Within 7 days after NTP	01 35 29 02 82 00
Project Work Plan that includes at a minimum the following written detailed sections: • Environmental and Decontamination Procedures • Installation of Project Controls • Traffic Control • Installation and Maintenance of Erosion and Sedimentation Controls • Hazardous Materials/Universal Waste Removal Procedures • Asbestos Removal Procedures • Demolition Activities • Waste Management and Disposal • Excavation and Backfill Activities • Building Protection Procedures • Perimeter Fencing and Metal Beam Guardrail Installation Procedures • Building Protection Procedures • Site Restoration Procedures	Within 10 days after NTP	01 35 43 01 35 43.13 01 35 53 01 50 00 01 55 26 01 57 13 01 57 16 01 66 00 01 74 00 02 41 00 02 81 00 02 82 00 02 84 00 07 10 00 32 31 13
Name and Qualifications of Proposed Cofferdam Supplier and/or Designer	Within 30 days after NTP	31 52 00
Water Control Plan	At least 14 days prior to the start of related work	01 50 10 31 52 00
Water Levels within Paper Mill Pond	Daily	01 50 10
Dam Construction Workplan • Written details on dam construction methods including means to access the raceway • Shop Drawings and Material Data for Metal Grates • Shop Drawings for Safety Rails • Name and Location of Proposed Quarry for Riprap • Specifications and Material Data for Gate System and Operator Mechanism	At least 30 days prior to the start of related work	03 30 00 05 30 00 05 52 13 31 37 00 31 52 00 40 05 59
Concrete and Reinforcing Steel Field Testing and Inspection Results	Within 24 hours of completion of all testing and inspections	03 30 00

Submittal	Submittal Timeframe	Reference Section(s)
Identification of Hot Work	Within 7 days after NTP	02 41 00 02 82 00
Proposed substitutions for materials or modifications to procedures specified in the Contract Documents	10 days prior to commencement of related work	01 35 13 01 66 00
Permits and proof of notifications	10 days prior to commencement of related work	02 41 00 02 82 00 35 71 00
List of Anticipated Wastes	With Bid	00 73 00
List of All Proposed Waste Haulers	With Bid	00 73 00
Names of All Proposed Disposal/Recycling Facilities	With Bid	00 73 00
Training Certificates	Prior to Work	00 73 00
Disposal Characterization Results	At least 5 days prior to preparation of disposal profiles	02 81 00
Weekly Construction Period Meeting Agenda	At least 24 hours prior to weekly meeting	01 31 19
Draft Meeting Minutes	10 a.m. the following Workday	01 31 19
Finalized Meeting Minutes	At least 24 hours prior to the subsequent weekly meeting	01 31 19
Daily Activity Reports	Daily, by 10:00 A.M. the next work day	01 31 19
Documentation of regulatory inspections	10 A.M. the next work day	01 11 13
Safety Data Sheets	Prior to mobilization	00 73 00
Results of air monitoring	Results of direct read instruments daily. Within 48 hours after completing monitoring activities for all other monitoring.	01 57 16
Proposed sources of materials, results of analytical and physical testing, samples of materials, certification of clean materials	At least 14 days prior to material delivery	31 00 00
Proposed landscaped materials including topsoil source and analytical testing and recommended rates for fertilizing, proposed seed mix and proposed jute netting.	At least 14 days prior to material delivery	32 90 00
Incident Reports	Within 24 hours	01 35 29

Submittal	Submittal Timeframe	Reference Section(s)
Disposal Certificates	Prior to progress payments	02 41 00 02 81 00 02 82 00 02 84 00
Copy of all paperwork associated with material transport and disposal	Daily, by 10:00 A.M. the next work day	02 41 00 02 81 00 02 82 00 02 84 00
Notice of Substantial Completion of Work	When Contractor considers work substantially complete	Article 14.04 of Section 00 70 00 – Standard Conditions
As-Built Record Drawings	With Notice of Substantial Completion of Work	01 11 13 01 78 00
Closeout Submittals: 1. Evidence of compliance with requirements of governing authorities 2. As-Built Drawings 3. Project Record Documents 4. Evidence of Payment and Release of Liens 5. Certificate of Insurance for Products and Completed Operations 6. Guarantees and Warranties	Within 10 days of receiving request from Engineer to make closeout submittals unless otherwise agreed to by Owner	Section 00 70 00 Standard Conditions, 01 11 13 01 78 00
Final Application for Payment	Upon receipt of all required submittals documenting the Work	Article 14.07 of Section 00 70 00 – Standard Conditions

Notes: NTP – Notice to Proceed.

SECTION 01 35 29 – HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES FOR CONTAMINATED SITES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description of Section

C. References and Standards

D. Health and Safety Requirements

E. Health and Safety Plan (HASP) Requirements

F. Responsibilities of the Contractor and Additional Subcontractors

G. Stop Work Authority

H. Employee Training

I. Hazard Communication

J. Site Access and Controls

K. Air Monitoring - General Requirements

L. Noise Monitoring

M. Perimeter Monitoring

N. Submittals

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures

B. Section 01 35 43 - Environmental Procedures

C. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

D. Section 01 35 53 - Security Procedures

E. Section 01 50 00 - Temporary Facilities and Controls

F. Section 01 50 10 – Temporary Water Control

G. Section 01 55 26 - Traffic Control

H. Section 01 57 13 - Temporary Erosion and Sediment Control

I. Section 01 57 16 - Temporary Project Controls

J. Section 02 41 00 - Demolition

K. Section 02 81 00 - Waste Management and Disposal

L. Section 02 82 00 - Asbestos Remediation

M. Section 02 84 00 - Hazardous Material Remediation

N. Section 03 30 00 – Reinforced Cast In-Place Concrete

O. Section 04 05 00 – Repair of Stone Masonry Walls

P. Section 05 30 00 – Metal Decking

Q. Section 05 52 13 – Pipe and Tube Railings

R. Section 07 10 00 – Weather Proofing

S. Section 31 00 00 – Earthwork

T. Section 31 37 00 – Stone and Riprap

U. Section 31 52 00 – Temporary Cofferdams

V. Section 32 31 13 – Fencing

W. Section 32 90 00 – Landscape Work

X. Section 40 05 59 – Slide Gates

1.3 DESCRIPTION OF SECTION

A. The Work under the Agreement is to be performed at the former Amerbelle Mill Site located at 104 East Main Street and 5 Brooklyn Street, Vernon, Connecticut, as shown on the Drawings. The Site consists of the former Amerbelle Corporation textile mill facility which is composed of 14 buildings situated on two parcels, north and south of Brooklyn Street. The parcel north of Brooklyn Street is approximately 1.5 acres in size and contains Buildings 1 through 9, 11 and 13, a skyway/bridge and a building housing two 20,000-gallon aboveground storage tanks (ASTs). The parcel located south of Brooklyn Street is approximately 2.7 acres and contains Buildings 12 and 14. A second skyway/bridge spanning Brooklyn Street connects the buildings on the two parcels. The Hockanum River runs from southeast to northwest through the Site

within a stone and concrete lined raceway. The raceway, starting from Paper Mill Pond to the southeast, passes below the northeast portion of Building 14, Brooklyn Street and Buildings 7 and 4 in the northern portion of the Site and spills down into American Mill Pond to the northwest. The Site is owned by The Town of Vernon, Connecticut and is currently vacant. Vehicle access to the Site is provided by fence gates along Brooklyn Street and East Main Street along with open parking areas.

The on-Site Work will include, but is not limited to, mobilization; site preparation; traffic control; site security; dust, noise, odor, and vapor control; health and safety measures; implementation of temporary facilities and controls; asbestos removal; hazardous materials removal; demolition activities; on-Site processing of building materials; placement and compaction of backfill materials; repair and sealing of buildings; construction of a dam and raceway repairs; off site waste transportation and disposal; final site cleaning; and demobilization.

B. Contractor shall be prepared to encounter polychlorinated biphenyls (PCBs), asbestos, lead, fuel oils, mercury, and other hazardous materials and universal wastes within all the buildings during the work as identified in Attachments A and H.

C. The Work covered by this Section includes furnishing all equipment, labor, materials and services to perform the operations associated with determining worker health and safety requirements, monitoring, providing worker health and safety protection for all Contractor and subcontractor personnel during the implementation of the Work. A summary of asbestos, PCBs, lead, fuel oils, mercury, hazardous materials, and universal wastes are included in Attachments A and H.

D. This Section describes the minimum health and safety requirements and contingency measures required as part of the Work.

1.4 REFERENCES AND STANDARDS

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

B. Federal Occupational Health and Safety Administration (OSHA) Standards.

1. Air Contaminants - Permissible Exposure Limits; OSHA 3112; 1989.

2. General Industry Standards and Interpretations; Volumes 1 - 3- OSHA 2077; U.S. Department of Labor, Occupational Safety and Health Administration; Specifically Sections: 29 CFR 1910.1000-1050 (air contaminants), 1910.120 (Hazardous Waste Operations and Emergency Response), 1910.1200 (Hazard Communication), 1910.301 Subpart S (Electrical), 1910.146 (Permit Required Confined Space) 1910.147 (Control of Hazardous Energy (Lockout/Tagout)), 1904 (Recordkeeping

and Reporting Occupational Injuries and Illnesses), 1990 (Identification, Classification and Regulation of Potential Occupational Carcinogens), and 1926 (Safety and Health Regulations for Construction).

3. Hazardous Waste Inspections Reference Manual; U.S. Department of Labor; Occupational Safety and Health Administration; 1986.

4. OSHA Field Operations Manual; 2nd Edition; U.S. Department of Labor; Occupational Safety and Health Administration; 1987.

C. CTDPH Standards for Asbestos Abatement.

1.5 HEALTH AND SAFETY REQUIREMENTS

A. The Contractor shall be responsible for monitoring working conditions and determining and providing appropriate health and safety protection for all workers engaged in the Work.

B. The Contractor's selected Certified Industrial Hygienist (CIH) shall be responsible for the development and implementation of a Site-Specific Health and Safety Plan (HASP) specifying the Contractor's policies and procedures to adequately protect Site workers, on-Site personnel, Site visitors and trespassers. The HASP shall be written in compliance with applicable sections of OSHA 29 Code of Federal Regulations (CFR) 1926 and 1910. The HASP must establish in detail the protocols necessary for protecting workers, on-Site personnel, visitors and the trespassers from potential physical and chemical hazards encountered during the work.

C. The Site Safety and Health Officer (described herein) shall conduct Daily Health and Safety briefings prior to each day's work and document completion of the briefings.

D. Site workers that are not in compliance with health and safety training requirements and medical monitoring will not be allowed to conduct Work at this Site.

E. The Contractor shall engage a CIH approved by the Owner and recognized by the American Board of Industrial Hygiene to develop, implement, administer and supervise the Site-Specific HASP and associated procedures in accordance with these Specifications. The CIH may be an employee of the Contractor. The CIH shall review the available chemical and analytical data, the specified scope of work and Site conditions in the development of the HASP. The qualifications of the CIH shall include:

1. A minimum of five (5) years working experience in the chemical or hazardous waste industry;

2. Demonstrable expertise in air monitoring techniques and in the development of personal protective equipment (PPE) programs for working in potentially toxic atmospheres; and

3. Working knowledge of State and federal occupational safety and health regulations.

F. The Contractor shall designate a Site Safety and Health Officer (SSHO), who shall be responsible in the continuous, day to day, implementation and enforcement of the HASP. The SSHO shall be assigned to the Site on a full-time basis when Work is occurring and shall report to the CIH and Engineer in matters pertaining to Site safety, health, and environmental concerns. The SSHO may be an employee of the Contractor. The SSHO shall be responsible for preparing and maintaining daily health and safety Site logs and reports. The SSHO cannot be utilized for fire watch activities. The qualifications of the SSHO shall include:

1. A minimum of one (1) year working experience at demolition and hazardous materials or waste sites where Level C PPE was required;

2. Working knowledge of applicable state and federal occupational safety and health regulations;

3. Specialized training in personal and respiratory equipment program implementation and in the proper use of air monitoring instruments, and air sampling methods and procedures;

4. Current certification in first aid and CPR by a recognized approved organization such as the American Red Cross; and

5. In addition to 40 Hour OSHA training, annual refresher training, and medical monitoring, the SSHO shall also be Supervisory trained in accordance with 29 CFR 1926.65 and 1910.120.

1.6 HEALTH AND SAFETY PLAN (HASP) REQUIREMENTS

A. The Contractor's HASP shall be prepared and implemented by the Owner-approved CIH and shall address all excavation, earthwork, asbestos removal, hazardous material removal, demolition, clearance procedures and protocols for identified and unidentified pipes and conduits, and other relevant general construction hazards, and shall include provisions for intended methods of sloping and shoring, as required by OSHA 29 CFR 1926.650-652.

B. The Contractor shall be responsible for all notifications to utility companies or other parties regarding any intrusive Site work in compliance with OSHA 29 CFR 1926.650-652 and all applicable local and State requirements.

C. At a minimum the HASP shall include:

1. A Site Control Plan to establish Work Zones including but not limited to the exclusion zone and contamination reduction zone on the Site, based on the Drawings and requirements specified in this Section. The Contractor shall also develop operational procedures in order to properly implement the plan.

2. Site Description and Hazard Evaluation for each element of the Work.

3. Names of key Contractor and subcontractor personnel and alternate responsible for Site safety and health (responsibilities and chain of command).

4. Safety and health hazard assessment and risk analysis for each Site task and operation, including physical, chemical and biological hazards.

5. Identification of the CIH and SSHO as well as additional key personnel and alternates responsible for Site safety.

6. Education and Training in accordance with applicable federal, State, and local regulations.

7. Personal Protective Equipment in accordance with applicable federal, state, and local regulations.

8. Medical Surveillance in accordance with applicable federal, state, and local regulations

9. Air Monitoring in accordance with applicable federal, state, and local regulations.

10. The Work Zone and Work Zone boundary dust, odor, asbestos, lead, PCBs, vapor, noise and other contaminant action levels in accordance with applicable federal, State, and local regulations.

11. Standard Operating Procedures for Engineering Controls for dust, odors, asbestos, lead, PCBs, vapors, noise, and other contaminants and work practices.

12. Standard Operating Procedures for clearance of identified and unidentified pipe, conduit, and exposed wires, present within the Limits of Work, including but not limited to identification of pipe, conduit, and exposed wire marking/tagging, and communication protocol.

13. Site Control Measures (Work Zones, Communications and Security) including a map indicating route to hospital for emergency medical care.

14. Personnel Hygiene and Decontamination.

15. Equipment Decontamination.

16. Logs, Reports and Recordkeeping.

17. Emergency Response Plan.

18. Emergency procedures for occurrences such as personal injury, fire, and exposure to toxic substances.

19. Emergency contact information for Contractor, subcontractors, fire, police, ambulance, and utility providers.

20. Contingency Measures.

D. The work zones shall be defined as follows:

1. The support zone shall be clearly delineated and shall be secured against active or passive contamination from the exclusion zone. The function of the support zone is to provide:

   a. An entry for personnel, materials and equipment to the exclusion zone of Site operations.

   b. An exit area for decontaminated personnel, materials and equipment from the exclusion zone of Site operations.

   c. Location for support facilities.

   d. A storage area for clean work equipment.

2. The contamination reduction zone shall be located at the interface of the exclusion and support zone. The function of the contamination reduction zone is to provide:

   a. An area to decontaminate personnel, equipment, and vehicles prior to entering the support zone from the exclusion zone.

   b. A physical separation of the support and exclusion zones.

3. The exclusion zone shall include and encompass all areas designated for contaminated materials handling. The level of personnel protective equipment required in the exclusion zone shall be in accordance with the Contractor's approved HASP as determined by the CIH and SSHO.

4. Task-specific Job Safety Analysis (JSA) for each component of work anticipated for the Project, including but not limited to:

   a. Mobilization Operations.

   b. Housekeeping.

   c. Fueling.

   d. General Labor.

e. Utility Clearance and Identification.

f. Unloading of Equipment and Materials.

g. Critical Lift Plans for Cranes and Similar Sized Equipment

h. Traffic Control including Closure of Brooklyn Street.

i. Hot Work.

j. Pipe Clearance and Identification.

k. Heavy Equipment Operation.

l. Office Trailer Site Setup.

m. Clearing and Grubbing, Including Tree Clearing.

n. Erosion and Sedimentation Controls Installation/Removal.

o. Fence Installation.

p. Roof Repairs and Sealing of Windows.

q. Decontamination.

r. Asbestos Removal.

s. Hazardous Material Removal.

t. Demolition.

u. Grading and Compacting.

v. Concrete Crushing

w. Temporary Water Control and Work within Raceway.

x. Dam Construction

y. Demobilization Operations.

5. In the event a change in work scope occurs, that in the opinion of Engineer, Owner, SSHO, or CIH requires a new JSA be prepared, such Work shall not be performed until Contractor submits the JSA for review and comment by Engineer.

1.7 RESPONSIBILITIES OF THE CONTRACTOR AND ADDITIONAL SUB-CONTRACTORS

A. Minimum precautions noted in this Section shall in no way relieve individual employers from their responsibility to implement stricter health and safety precautions as warranted by the Work.

B. The CIH shall conduct an initial survey to determine the appropriate safety procedures and level of worker safety equipment. The SSHO shall maintain a continuous health and safety monitoring program throughout the performance of the

Work. It shall be the CIH's responsibility to notify the Contractor and the Engineer of any deviations from the health and safety monitoring program.

C. It shall be the Contractor's responsibility to notify the Engineer and Owner verbally and in writing as quickly as possible should any unforeseen safety hazard or condition become evident during the performance of the Work. In the interim, the Contractor shall take prudent action to establish and maintain safe working conditions and to safeguard workers, on-Site personnel, trespassers, and the environment in accordance with the established emergency response procedures detailed in the Contractor's HASP.

1.8 STOP WORK AUTHORITY

A. Should any unforeseen safety-related factor, hazard, or condition which poses a potential threat of physical injury or harm to Site personnel or the environment become evident during the performance of the Work, all Site personnel shall have authority as granted by OSHA regulations to issue a Stop Work directive. In addition, Engineer and Owner shall also have authority to issue a Stop Work directive upon observation of a safety-related factor, hazard, or condition of potential injury or harm to the environment.

B. If a Stop Work directive is issued, Contractor must immediately take prudent corrective action to secure the Work and provide safe conditions for Site personnel and the environment. This corrective action shall be followed by an immediate written incident report to Engineer and Owner. The incident report shall be provided as soon as possible but, at a minimum, within 24 hours of the incident. Contractor shall conduct an investigation and provide a written report incorporating results of the investigation if directed to do so by Engineer or Owner.

C. Contractor shall not charge standby time during Stop Work directives initiated by Owner or Engineer, in response to Contractor's near miss, unsafe action or reportable safety incident.

D. Should Contractor refuse to obey a Stop Work directive, Contractor shall immediately be excused from the Site.

1.9 EMPLOYEE TRAINING

A. Prior to the initiation of the Work, the Contractor and all Subcontractors shall certify that all personnel assigned to perform or supervise work at the Site have received, and that new hires will receive, prior to being allowed on the Site, appropriate training in compliance with 29 CFR 1926.65/1910.120. The training for personnel working in the vicinity of environmentally impacted Site material shall consist of a minimum of forty (40) hours of health and safety training, twenty-four (24) hours of "on the job" training, and eight (8) hours of refresher training annually thereafter. All other Contractor personnel on the Site working outside of areas of known environmental impacts are required to have a minimum

of twenty-four (24) hours of training in compliance with 29 CFR 1926.65/1910.120(e). In addition, the designated supervisory personnel shall have a minimum of eight (8) hours additional specialized training for managing hazardous waste operations in compliance with 29 CFR 1926.65/1910/120e.

B. Annual medical monitoring in compliance with 29 CFR 1926.65(f)/1910.120(f), is also required for personnel working in the vicinity of environmentally impacted Site material.

C. It will be the Contractor's responsibility to train its employees and to ensure that the Contractor's subcontractors are trained. The Contractor shall be responsible for ensuring that only personnel having successfully completed the required training are permitted to enter the Site. Documentation of training for all Site employees shall be maintained on the Site by the Contractor at all times.

D. The Contractor and any Subcontractors shall comply with the following additional requirements; Hazard Communication, Respiratory Protection, Emergency Response procedures, Site orientation, daily toolbox meetings, weekly safety meeting, and all other training as required by other applicable regulations within 29 CFR 1926 and 1910.

1.10 HAZARD COMMUNICATION

A. The Contractor and each subcontractor must have a written Hazard Communication Program. This Program must be available on the Site at all times for review by the Owner or the Engineer.

B. The Contractor shall ensure that Safety Data Sheets for chemicals brought onto the Site by the Contractor and subcontractors shall be maintained within a current and comprehensive Chemical Inventory located at the Site and must be made available to the Owner or the Engineer upon request.

1.11 SITE ACCESS AND CONTROLS

A. The Contractor's HASP shall include Site access provisions which effectively limit access to active Work areas to only those persons in full compliance with the requirements of OSHA 29 CFR 1926.65/1910.120. Additionally, access into each specific Work zone shall be restricted to those employees assigned to complete the specified tasks.

B. The Contractor shall prepare Site control procedures to establish Work zones, based on the proposed work locations and the requirements specified in this Section. The HASP shall include operational procedures in order to properly implement the Site access and control provisions of the plan.

C. The Contractor shall change Work zones as necessary to support the specific Work being performed.

D. No eating, drinking, or smoking will be allowed within Work zones located in the vicinity of environmentally-impacted Site materials.

E. The Contractor shall be required to make provisions for pedestrian and other Site worker traffic control as necessary.

F. The Contractor shall maintain perimeter Site fencing during the performance of the Work to limit unauthorized access to the Site.

G. The Contractor is responsible for securing the Site and individual Work areas at the end of each shift and ensuring that all Work areas are fenced, barricaded, or secured in such a way so as to prevent unauthorized or accidental access to Work areas or tampering with equipment or materials that may result in bodily injury or a release of hazardous materials consistent with the requirements of Section 01 35 53 - Security Procedures. Contractor must limit the extent of open excavation areas within the work limits and must at a minimum protect excavations left open during non-working hours marked with orange construction fencing or yellow caution tape.

1.12 AIR MONITORING - GENERAL REQUIREMENTS

A. The Contractor shall be responsible for establishing an air monitoring program to monitor organic vapors, asbestos, PCBs, lead, odors, and dusts levels within active Work Zones and Work Zone boundaries.

B. The air monitoring program shall establish Work Zone and Work Zone boundary limits for organic vapors, asbestos, PCBs, lead, odors, dust, and other contaminants designed to be protective of worker health and safety, compliant with the applicable federal, State, and local requirements, and satisfy the Site perimeter limits within Section 01 57 16 - Temporary Project Controls.

C. The air monitoring program shall include descriptions of organic vapor, asbestos, PCBs, lead, odor, dust, and other contaminant suppression and control measures to be implemented if air monitoring results exceed the specified limits.

D. Information gathered during the air monitoring program shall be used by the Contractor to determine appropriate safety and personnel protective measures to be implemented during intrusive Work and the handling of contaminated and potentially contaminated materials and to document on-Site employee exposures. The Contractor shall use this information to implement appropriate employee hazard control measures, contingency plans, or both.

E. Action levels for the upgrading or downgrading of worker levels of protection shall be based upon information published by the American Conference of Governmental Industrial Hygienists (ACGIH), OSHA, and the United States Environmental Protection Agency. Action levels shall be based upon established OSHA Permissible Exposure Limits, ACGIH Threshold Limit Values and ACGIH Short-Term Exposure Limits. Action levels shall be established for each work activity and each contaminant present. A table summarizing each activity, the contaminant(s) to

be monitored, monitoring instruments, frequency and duration of monitoring, action levels and required response action shall be included in the HASP.

F. Direct read air monitoring results shall be cataloged and maintained by the SSHO and shall be provided to the Engineer daily. All other air monitoring results shall be provided to the Engineer within forty eight (48) hours after completing monitoring activities.

G. All required Work Zone and Work Zone boundary air monitoring equipment shall be provided by the Contractor and shall be maintained and calibrated according to OSHA and National Institute for Occupational Safety and Health (NIOSH) analytical methods or the manufacturers' instructions, or both. Calibration field checks using the appropriate reference standards shall be made on the Site at the minimum frequency of twice per shift (pre and post sampling). A daily log of all instrument readings, as well as field reference checks and calibration information must be maintained in the Contractor's record documents.

H. The SSHO shall be responsible for operating all air monitoring equipment.

1.13 NOISE MONITORING

A. Contractor shall conduct all operations so as to minimize noise consistent with OSHA 29CFR 1910.95 and Town of Vernon noise ordinances.

B. The Contractor shall be responsible for establishing a monitoring program to continuously monitor noise levels within active Work zones and Work zone perimeters.

C. The monitoring program shall establish Work Zone and Work Zone boundary limits for noise designed to be protective of worker health and safety, compliant with the applicable federal, State, and local requirements and ordinances, and satisfy the Limits of Work limits within Section 01 57 16 - Temporary Project Controls. In the event the OSHA limit of 85 dBA is exceeded for eight (8) hours per day or a peak level of 140 dBA is exceeded, a hearing protection program shall be implemented.

D. The monitoring program shall also include descriptions of noise suppression and control measures to be implemented if the monitoring results exceed the specified limits.

E. Owner reserves the right to suspend Work at any time, if necessary, due to noise generation causing a safety hazard.

F. Monitoring results shall be cataloged and maintained by the SSHO and shall be provided to the Engineer daily.

G. All required monitoring equipment shall be provided by the Contractor and shall be maintained and calibrated according to OSHA and NIOSH analytical methods

or the manufacturers' instructions, or both. Calibration field checks using the appropriate reference standards shall be made on the Site at the minimum frequency of twice per shift (pre and post sampling). A daily log of all instrument readings, as well as field reference checks and calibration information must be maintained in the Contractor's record documents.

H. The SSHO shall be responsible for operating the monitoring equipment.

1.14 PERIMETER MONITORING

A. The Engineer will perform Limits of Work monitoring consistent with Section 01 57 16 - Temporary Project Controls. Perimeter action levels for total volatile organic compounds and particulate dust of 1 part per million (ppm) and 0.15 mg/m^3 PM_{10}, respectively will be established. In addition, no visible dust shall be permitted outside the Limits of Work.

B. In the event any of the action levels described herein or within Section 01 57 16 - Temporary Project Controls are met or exceeded, the Contractor shall immediately address the source, modifying work practices and/or implement additional engineering controls prior to proceeding with additional work to the satisfaction of the Engineer at no additional cost to the Owner except as specified herein.

1.15 SUBMITTALS

A. Submit HASP in accordance with Section 01 33 00 - Submittal Procedures.

B. Within 10 days of Notice to Proceed but no less than 14 days prior to commencement of field activities, Contractor shall submit the following to the Engineer:

1. Written site-specific HASP containing all applicable requirements under 29 CFR 1910.120 and section 1.6 above. The plan shall be written to avoid misinterpretation, ambiguity, and mistakes that verbal orders cause.

2. HASP approvals by appropriate and qualified Contractor personnel for review and approval by Owner and Engineer.

3. Documentation of medical monitoring for all on-Site workers.

4. Documentation of 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training and applicable eight (8)-hour annual HAZWOPER refresher training and other applicable training (e.g., confined space entry) for all on-Site workers.

5. Documentation of personnel respirator qualification and fit testing.

6. Documentation must be maintained on the Site at all times by the Contractor.

C. During Work Activities:

1. All required forms and OSHA records shall be maintained on the Site by the Contractor as applicable.

D. Work Zone and Work Zone Boundary Monitoring Results:

1. Monitoring Results: Work Zone and Work Zone Boundary monitoring results shall be continuously reviewed by Contractor. Contractor shall notify the Engineer immediately of concentrations above established action levels. Contractor shall submit monitoring results via electronic files per Section 01 33 00 - Submittal Procedures.

PART 2 PRODUCTS

2.1 MATERIALS

A. The Contractor and all Subcontractors shall provide on-Site personnel, when required by the Contractor's HASP, with the appropriate PPE and shall ensure that all PPE is kept clean and well maintained.

B. Minimum PPE to be worn on the Site includes hard hats, steel toed work boots, reflective safety vests, safety glasses, and standard work clothes. Additional task specific minimum PPE requirements are included in Section 02 41 00 – Demolition, Section 02 82 00 – Asbestos Remediation, and Section 02 84 00 – Hazardous Material Remediation.

C. All health and safety materials and equipment shall conform, at a minimum, to OSHA, NIOSH and American National Standards Institute standards and requirements.

D. The Contractor shall supply eyewash stations, first aid supplies and fire extinguishers for the period of the Work.

E. The Contractor shall supply any additional PPE or safety equipment for the period of construction as required by the Contractor's HASP or OSHA.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Implementation and General Requirements

B. Emergency/Contingency Planning

C. Logs, Reports, and Record Keeping

D. Decontamination

E. Incident Reporting Procedures

3.2 IMPLEMENTATION AND GENERAL REQUIREMENTS

A. The HASP shall be implemented by the Contractor and the subcontractors under the direction of the CIH. It is the Contractor's responsibility to ensure compliance with the HASP by all on-Site personnel. Modifications to the Contractor's HASP shall be made by the CIH after consultation with the Engineer.

B. The Engineer may conduct quality assurance inspections and will have access to all of Contractor's project-specific health and safety records.

C. The levels of protection are established in the referenced standards. It is anticipated that the majority of the Work will require personal protection provided by modified Level D or Level C. Upgrading the level of the protection shall be the sole responsibility of the Contractor. The CIH shall notify the Contractor and the Engineer immediately of the need to upgrade levels of protection.

3.3 EMERGENCY/CONTINGENCY PLANNING

A. At a minimum, the Contractor's HASP shall include emergency procedures for occurrences such as personal injury, fire, and exposure to toxic substances. The SSHO shall instruct all personnel, including Subcontractor personnel, on the Site during the daily safety briefings concerning these safety procedures.

B. Emergency response procedures shall include employee training, alarm systems, escape routes and procedures, critical operations or equipment, rescue and medical duty assignments, designation of responsible parties, emergency reporting procedures and methods to account for all employees after evacuation.

C. Emergency contact information shall be included in the Contractor's HASP and shall be posted by the Contractor in accessible areas near the Work.

D. In the event that on-Site Work results in the accidental spill or release of oil or hazardous materials, containment to the extent possible by on-Site personnel (in proper PPE as designated by the SSHO) shall be required of the Contractor. Containment shall include the use of absorbent pads or materials, soil dikes, covering and/or diverting spills from sewers, drains, surface water bodies, etc. For any spill that cannot be controlled by on-Site personnel or are above the applicable reportable quantities, the SSHO or designee shall secure the area and notify the necessary personnel, including, but not limited to the Owner and Engineer**,** state environmental personnel, the Connecticut Department of Energy and Environmental Protection (CTDEEP) and a designated hazardous materials cleanup sub-contractor trained in compliance with the emergency response training requirements of 1926.65 and 1910.120. All Contractor personnel who perform activities involving a response

to a release of hazardous substances shall be trained in compliance with the emergency response training requirements of 1926.65 and 1910.120.

E. Should any unforeseen hazardous condition that may affect the completion of this Work become evident, it shall be the CIH's responsibility to bring such to the attention of the Contractor, Owner and the Engineer immediately both verbally and in writing. Resolution of the matter shall come through the Owner. In the interim, the CIH shall take prudent action to establish and maintain safe working conditions and to safeguard all Site personnel, the public, and the environment.

3.4 LOGS, REPORTS AND RECORD KEEPING

A. The SSHO shall maintain daily logs and reports covering the implementation of the HASP including the Air Monitoring Program and daily safety meetings. The format shall be developed by the CIH to include daily logs and weekly reports. The CIH shall provide the Contractor and the Engineer with copies of all logs and reports as requested.

B. The SSHO shall provide the Contractor and Engineer with minutes of safety meetings including topics discussed and attendance sheets.

C. The Contractor shall be solely responsible for compliance with all federal laws (such as OSHA 29 CFR 1926.33/1910.1020) which require that chemical exposure records and medical records be maintained by the employer for a specified length of time after the termination of the job.

3.5 DECONTAMINATION

A. The Contractor’s HASP shall specify equipment and vehicle decontamination procedures to minimize the tracking of contaminants from the Site in accordance with Section 01 35 43.13 – Environmental Procedures for Hazardous Materials.

B. The Contractor shall be responsible for the collection, characterization, and off site disposal of PPE and decontamination materials to an Owner approved facility.

3.6 INCIDENT REPORTING PROCEDURES

A. Incident Response Steps. In the event of a safety incident, including injuries and “near-misses”, the CIH shall provide details of the incident to the Contractor, Engineer and the Owner as soon as possible and, at a minimum, within 2 hours of the incident. The report shall provide details regarding the following:

1. What happened?

2. Who and how many people were injured?

3. What treatment was administered?

4. What was the nature and seriousness of the injury?

5. Where did the incident occur?

6. When did the incident occur (date, time of day)?

7. Were there any witnesses?

CIH shall conduct an investigation and at a minimum, provide a written report to the Owner within 24 hours of the incident. The investigation shall include identification of contributing factors relating to and the root cause of the incident and the corrective actions that will be taken to prevent reoccurrence. Contractor vehicle accidents occurring during the performance of work shall also be investigated and reported to the Owner and the Engineer.

B. All injuries, accidents and illnesses occurring as a result of or during on-Site work must be recorded on the Contractor's or affected Subcontractor's OSHA 200 and 101 or equivalent forms. These forms shall be forwarded to the Owner and the Engineer. The Contractor shall report all injuries to the appropriate authorities, including OSHA if necessary, and the Owner and the Engineer immediately.

C. The Contractor shall make arrangements with an ambulance service, medical professionals, and hospitals for the emergency treatment of its employees prior to commencing work on the Site. The Owner and the Engineer will not furnish any emergency medical treatment.

END OF SECTION

SECTION 01 35 43 - ENVIRONMENTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Submittals

D. Environmental Requirements

E. Protection Outside Work Limits

F. Protection of Water Resources

G. Spillages

H. Debris Disposal

I. Dust, Odor, Vapor, Vermin, and Noise/Vibration Control

J. Decontamination

1.2 RELATED SECTIONS:

A. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

B. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

C. Section 01 50 10 – Temporary Water Control

D. Section 01 57 13 - Temporary Erosion and Sediment Control

E. Section 01 57 16 - Temporary Project Controls

F. Section 01 74 13 - Progress Cleaning

G. Section 02 41 00 – Demolition

H. Section 02 81 00 – Waste Management and Disposal

I. Section 02 82 00 - Asbestos Remediation

J. Section 02 84 00 - Hazardous Material Remediation

K. Section 03 30 00 – Reinforced Cast In-Place Concrete

L. Section 04 05 00 – Repair of Stone Masonry Walls

M. Section 05 30 00 – Metal Decking

N. Section 05 52 13 – Pipe and Tube Railings

O. Section 07 10 00 – Weather Proofing

P. Section 31 00 00 – Earthwork

Q. Section 31 37 00 – Stone and Riprap

R. Section 31 52 00 – Temporary Cofferdams

S. Section 32 90 00 – Landscaped Work

T. Section 40 05 59 – Slide Gate

1.3 REFERENCES

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

1.4 SUBMITTALS

A. Contractor shall prepare a written detailed environmental procedures section for inclusion in the Project Work Plan within 10 days of the Notice to Proceed.

B. The environmental procedures section of the Project Work Plan shall address protection of soil and water resources, debris disposal, dust control, odor and air pollution control, noise/vibration control, spill control, and decontamination to comply with all federal, State, and local regulations pertaining to water, air, and noise pollution and the Site specific permits/approvals obtained for this project by the Contractor, Owner, these Specifications, and the Drawings. At a minimum, the section shall address the following:

1. Specifications for proposed products to be used at the Site including Safety Data Sheets (SDSs). The Contractor shall provide to the Engineer samples or additional technical information demonstrating the effectiveness of the products proposed to implement the Project WorkPlan, upon request of the Engineer.

2. The Contractor shall include elements of spill control. The information shall include, but not be limited to, a list of all potentially hazardous products (such as products brought on the Site by the Contractor such as fuel, hydraulic oil, and cleaners) and corresponding provisions to be taken to prevent accidental introduction of such materials into any waterway, the

air, or the ground. This section shall also include plans for preventing polluted runoff from Work areas and equipment parking and maintenance areas from entering local water bodies as well as regulatory and Owner notification procedures in the event of a spill.

3. Erosion and sedimentation control material specifications as detailed on the Drawings and specified in Section 01 57 13 - Temporary Erosion and Sediment Control.

4. The Contractor shall detail methods for conducting daily housekeeping activities in accordance with this Section.

5. The Contractor shall detail plans for performing Decontamination activities in accordance with Section 01 35 43.13 - Environmental Procedures for Hazardous Materials. Plan shall outline the construction and locations of any additional decontamination pads and wheel wash stations designed to contain decontamination sediment and fluids generated as part of the Work. Additionally, Contractor shall outline decontamination methods to be used for vehicles, personnel, process equipment and materials leaving the Site and the methods of storage, transport, and disposal for decontamination wastes. Additionally, all equipment (catalog cuts shall be provided), pad construction materials, and cleaning materials (including all SDSs for proposed decontamination additives) shall be included in the Plan.

6. The details of dust, odor, vapor, vermin, and noise/vibration control measures and procedures to comply with the requirements described in Section 01 57 16 - Temporary Project Controls.

1.5 ENVIRONMENTAL REQUIREMENTS

A. All environmental pollution shall be prevented, abated, and controlled; environmental degradation arising from construction activities shall be minimized by complying with all permit/license conditions and requirements; applicable federal, State, and local laws; and regulations concerning environmental pollution control and abatement, as well as the specific requirements contained within these Specifications and Section 00 73 00 – Supplemental Conditions.

1.6 PROTECTION OUTSIDE WORK LIMITS

A. Areas outside the Limits of Work of this Agreement shall not be disturbed. Confine work activities to areas defined by the Drawings. Disruption of areas beyond that specifically called for in the Contract Documents will not be permitted without the prior approval of Owner. Contractor shall not perform any unauthorized disruption of soil and/or sediment and shall be responsible for restoring such disruptions, including handling of any wastes generated there from at no additional cost to the Owner.

1.7 PROTECTION OF WATER RESOURCES

A. Waste materials shall not be discharged to surface or groundwater. The Contractor shall comply with all applicable federal, State, and local laws concerning pollution of surface and ground waters. The Contractor is responsible for proper management including treatment and discharge of any stormwater or groundwater that may be encountered during execution of the Work, regardless of when such groundwater or stormwater control is necessary.

B. Protect water resources consistent with Section 00 73 00 – Supplemental Conditions.

1.8 SPILLAGES

A. Take all necessary measures to ensure that no contamination of the soil, sediments, groundwater, surface waters, or other uncontaminated areas will occur from any of the activities required to perform the Work or from equipment or materials used to perform the Work. Report all spills to the Engineer and Owner immediately. Take corrective action immediately, using approved emergency response and spill containment techniques in accordance with Section 01 35 29 - Contractor's Health and Safety Plan for Contaminated Sites and the Project Work Plan. These corrective actions shall be performed by the Contractor at no additional cost to the Owner.

1.9 DEBRIS DISPOSAL

A. Contractor is responsible for debris disposal including but not limited to cleared materials (i.e., trees/brushes/branches), foreign materials, and other surface and subsurface debris removed from within the allowable removal limits shown on the Drawings in order to facilitate the Work as well as the proper, containerization, staging, preparation of waste material for treatment/disposal, loading, transportation, and disposal of waste material. All debris shall be disposed at facilities pre-approved by the Owner.

1.10 DUST, ODOR, VAPOR, VERMIN, NOISE/VIBRATION CONTROL

A. Implement dust, odor, vapor, vermin, and noise/vibration control measures in accordance with Section 01 57 16 - Temporary Project Controls as necessary to adequately protect the public and employees of Contractor, subcontractor, Owner, and Engineer. Implement these measures as required by the Engineer-approved environmental procedures section of the Project Work Plan and consistent with Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites.

1.11 DECONTAMINATION

A. Decontaminate personnel and construction equipment in accordance with the Health and Safety Plan referenced in Section 01 35 29 - Health, Safety, and

Emergency Response Procedures for Contaminated Sites, Section 01 35 43.13 - Environmental Procedures for Hazardous Materials, Section 02 41 00 – Demolition, Section 02 82 00 - Asbestos Remediation, and Section 02 84 00 – Hazardous Material Remediation.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Notification of Noncompliance

B. Protection of Soil Resources

C. Protection of Water Resources

D. Maintenance of Pollution Control Facilities

3.2 NOTIFICATION OF NONCOMPLIANCE

A. The Contractor will be notified by the Owner or Engineer of noncompliance with the provisions of this Section and Section 00 73 00 – Supplemental Conditions. Immediate corrective action shall be taken to be in compliance with this specification section and related sections. A notification by Owner or Engineer, delivered at the Site, shall be sufficient for the Contractor to take action, and the date and time of such notice shall be recorded in the Contractor's Daily Report. The Owner may issue an order stopping all or part of the Work for failure to comply until corrective action has been taken. No time lost due to such stop orders shall be the subject of a claim for extension of time or for costs or damages from the Owner.

3.3 PROTECTION OF SOIL RESOURCES

A. Install barriers as necessary to prevent migration of materials into or outside the Work area limits as shown in Drawings and in accordance with Section 01 57 13 - Temporary Erosion and Sediment Control.

B. Stockpiled materials shall be staged in areas approved by the Engineer and stored in a manner to prevent erosion, dust generation, etc.

C. Stockpiled materials shall be adequately protected from precipitation and surface water runoff so as to prevent saturation of the materials and contamination of the stockpiled material prior to being placed.

D. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter. Store loose granular materials on minimum 6 millimeter (mil) thickness poly-ethylene sheeting and covered with minimum 6 mil thickness poly-ethylene sheeting. Provide temporary berms as necessary to divert stormwater runoff away from stored loose granular materials.

3.4 PROTECTION OF WATER RESOURCES

A. Install barriers as necessary to prevent migration of materials into or outside the Work area limits.

B. Control the surface water runoff from the Work areas and the discharge of waters from Work areas to the surrounding land or watercourses.

C. Compliance with state water quality standards and conditions of any permits and clearances obtained for the work is the Contractor's responsibility.

D. Except as provided in the contract, disposal of any wastes, effluents, trash, grease, chemicals, or other contaminants in waterways shall not be allowed. If any waste material is dumped in unauthorized areas, the material shall be removed and the area restored to a condition approximating the adjacent undisturbed area. Contaminated ground shall be excavated, disposed of, and the area restored to its pre-disturbed condition at no additional cost to the Owner.

3.5 MAINTENANCE OF POLLUTION CONTROL FACILITIES

A. The Contractor shall maintain all constructed facilities and portable pollution control devices for the duration of the contract or for that length of time that construction activities create the particular pollutant.

END OF SECTION

SECTION 01 35 43.13 – ENVIRONMENTAL PROCEDURES FOR HAZARDOUS MATERIALS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Submittals

D. Decontamination Requirements

1.2 RELATED SECTIONS

A. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

B. Section 01 35 43 - Environmental Procedures

C. Section 02 41 00 – Demolition

D. Section 02 81 00 – Waste Management and Disposal

E. Section 02 82 00 - Asbestos Remediation

F. Section 02 84 00 - Hazardous Material Remediation

G. Section 31 00 00 - Earthwork

1.3 REFERENCES

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

1.4 SUBMITTALS

A. Contractor shall submit information on decontamination procedures as part of the environmental procedures section of the Project Work Plan specified in Section 01 35 43 – Environmental Procedures and as required in Section 01 33 00 – Submittal Procedures. The decontamination information to be provided shall, at a minimum, detail all equipment (catalog cuts shall be provided), cleaning materials (including all SDSs for proposed decontamination additives), and procedures proposed for the decontamination of vehicles, personnel, equipment and materials leaving Work areas and the Site.

1.5 DECONTAMINATION REQUIREMENTS

A. Contractor shall furnish and/or provide all supervision, labor, tools, materials, equipment, services, and appurtenances as necessary for, or incidental to, the construction and maintenance of a decontamination pad and equipment to collect and store the resulting decontamination fluids as described in these Specifications. The Contractor shall remove all such items when no longer needed, or upon completion of the Work.

B. Contractor shall perform all required decontamination activities consistent with the Engineer-approved Project Work Plan.

C. Contractor shall furnish and/or provide all supervision, labor, tools, materials, equipment, services, and appurtenances necessary for, or incidental to, personnel decontamination.

D. Contractor shall provide water as needed for decontamination activities. Contractor shall coordinate with the Connecticut Water Company to obtain a hydrant use permit, install a temporary water service, or may obtain water from an alternative off-site source approved by the Owner and Engineer. Water from the raceway or adjacent ponds shall not be utilized for decontamination water.

PART 2 MATERIALS

2.1 SECTION INCLUDES

A. Decontamination Pad

B. Water

2.2 DECONTAMINATION PAD

A. Contractor shall construct a material and equipment decontamination pad which shall prevent wash water from leaching into underlying soils using an impermeable surface, liner, or membrane approved by the Engineer. All decontamination activities shall be conducted at the decontamination pad. The pad must be adequately constructed to drain all wash water to a collection sump. All collected water shall be pumped into a holding tank for off site transport and disposal at an Owner-approved disposal facility.

B. The collection sump shall be equipped with a sump pump that transfers any accumulated liquids to a holding tank for subsequent characterization and off site transport and disposal.

C. Contractor shall provide holding tanks required for use on-Site to store runoff decontamination water, storm water, etc. Holding tanks shall be sized appropriately and provided in sufficient quantity to prevent down time. All holding tanks shall be staged within adequate secondary containment.

2.3 WATER

A. Contractor shall obtain water for decontamination, dust suppression, and other activities associated with the Work as Specified in Section 01 50 00 - Temporary Facilities and Controls.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Decontamination Pad

B. Need for Decontamination

C. Decontamination Requirements

D. Extent of Decontamination

E. Operation and Maintenance of the Decontamination Pad

F. Disposal of Decontamination Fluids

3.2 DECONTAMINATION PAD

A. The decontamination pad shall be maintained in a condition which shall prevent tracking or flowing of impacted materials and sediment onto public right-of-way or non-impacted portions of the Site. All impacted materials and sediment spilled, dropped, washed or tracked onto public rights-of-way or non-impacted portions of the Site must be removed immediately. Periodic inspection and maintenance shall be provided as needed.

B. Contractor shall maintain decontamination pad holding tanks at all times including ensuring adequate capacity and clean out of sediment.

3.3 NEED FOR DECONTAMINATION

A. All personnel entering the Exclusion Zone and Contamination Reduction Zone, as defined in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites, shall require decontamination.

B. All vehicles and equipment entering the Exclusion Zone and Contamination Reduction Zone, as defined in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites, or that have been in contact with impacted Site materials and sediment, shall require decontamination.

C. Contractor shall detail in their Project Work Plan (Decontamination section) the procedures, equipment, and clearance criteria to be used for the decontamination

of all equipment to be removed from Exclusion and Contamination Reduction Zones.

3.4 DECONTAMINATION REQUIREMENTS

A. Equipment Decontamination

1. Contractor shall use the decontamination pad described above or decontamination units as described in Section 02 82 00 - Asbestos Remediation for the decontamination of all equipment which has entered the Exclusion and/or Contamination Reduction Zones. Contractor shall ensure that any equipment that has been in contact with the Exclusion and/or Contamination Reduction Zones is decontaminated properly before leaving these zones.

2. Contractor shall be responsible for management and disposal of all waters collected by the decontamination pad/unit (including surface stormwater) in accordance with applicable local, State, and federal regulations. The disposal of decontamination fluids is considered incidental and no separate payment shall be made for the collection, management and off site transport and disposal of decontamination fluids.

B. Personnel Decontamination

1. Personnel decontamination procedures shall be followed by the Contractor as specified in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites and Section 02 82 00 - Asbestos Remediation.

2. Contractor shall be responsible for management and disposal of all waters collected during personnel decontamination activities in accordance with applicable local, State, and federal regulations. The disposal of decontamination fluids is considered incidental and no separate payment shall be made for the collection, management and off-Site transport and disposal of decontamination fluids.

3.5 EXTENT OF DECONTAMINATION

A. Vehicles and Equipment

1. All vehicles and equipment requiring decontamination shall be washed to the extent that visible demolition debris, soil, sediment, or contaminant residuals are removed from the vehicle body, undercarriage, and tires and no visible tracking of demolition debris, soil, sediment, or contaminant residuals onto surfaces occurs, as determined by the Engineer.

3.6 OPERATION AND MAINTENANCE OF THE DECONTAMINATION PAD

A. The decontamination process shall be performed in such a manner that all water used and residuals removed during decontamination falls onto the decontamination pad and is captured by the sump provided in the decontamination pad. Residuals and decontamination water captured by the sump shall be removed on a daily basis, as operationally required, or as required by the Engineer. The decontamination pad shall be washed down at the completion of each day of Work.

3.7 DISPOSAL OF DECONTAMINATION FLUIDS

A. All wash water generated from the equipment decontamination pad and personnel decontamination procedures, as outlined in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites shall be collected, contained, and handled by the Contractor in accordance with all applicable federal and State regulations and policies.

B. Decontamination fluids and residuals generated from this activity shall be collected and disposed of off the Site at a licensed facility pre-approved by the Owner.

END OF SECTION

SECTION 01 35 53 – SECURITY PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Summary

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures

B. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 55 26 - Traffic Control

D. Section 32 31 13 – Fencing

1.3 SUMMARY

A. The Contractor shall be responsible for maintaining and repairing/replacing damaged existing perimeter fencing and gates within the Limits of Work as needed to prevent and provide access to the Work. All existing fencing and gates are to remain at the completion of the Work.

B. The Contractor shall furnish, install, and maintain temporary perimeter fencing, as specified on the Drawings and Section 32 31 00 – Fencing. Consistent with Section 32 31 00 – Fencing and the Drawings, Contractor may elect to install 6 foot high permanent chain link fencing and gates that will be installed as part of final restoration activities in lieu of temporary 8 foot high fencing.

C. Contractor shall equip all existing gates with locks for his/her use throughout the Work. Gates shall be locked at all times or manned by Contractor personnel.

D. Work area gates shall be maintained as shown on the Drawings. All gates shall be equipped with locks, be keyed alike, and keys shall be provided to the Engineer and Owner.

E. The Contractor shall be responsible for the removal of all temporary fencing around the perimeter of the Limits of Work at the completion of the project.

F. The Contractor is responsible for repairing existing permanent fence or newly installed permanent fence damaged during Work activities at no additional cost to the Owner.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Maintaining Security During Site Access/Use

3.2 MAINTAINING SECURITY DURING SITE ACCESS/USE

A. Contractor shall access the Site utilizing facility gates identified on the Drawings. Gates shall remain locked or manned by Contractor personnel at all times.

B. Work area gates must remain closed and locked during all non-working hours and when not is use during working hours.

1. Restrict entrance of persons and vehicles into Work areas.

2. Allow entrance only to authorized persons.

3. Maintain daily log of workers and visitors, submit to Engineer daily.

C. Protect Work areas from theft, vandalism, and unauthorized entry including locking and/or securing entryways into all buildings.

D. Initiate the security program at project mobilization.

E. Maintain security program throughout construction period.

F. The Contractor is responsible for all costs associated with providing the access restriction features, maintaining all features during construction and removal and disposal of temporary features at the conclusion of the Work excluding the existing and newly installed perimeter fencing and gates.

G. Protect all staged waste materials from vandalism and unauthorized access.

H. Should any unforeseen, potentially Site security condition become evident during the performance of the Work, it shall be the Contractor’s responsibility to bring such to the attention of the Engineer for resolution both verbally within 1 hour and in writing within 48 hours. In the interim, the Contractor shall implement all necessary prudent action to establish and maintain safe working conditions and to safeguard employees, the public, and the environment.

END OF SECTION

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Requirements of Regulatory Agencies and Utilities

D. Construction Light and Power

E. Water Supply

F. Temporary Telephone Service

G. Internet Service

H. Temporary Sanitary Facilities

I. Signs

J. Field Office

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures

B. Section 01 35 43 - Environmental Procedures

C. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

D. Section 01 35 53 - Security Procedures

E. Section 01 50 10 – Temporary Water Control

F. Section 01 55 26 - Traffic Control

G. Section 01 57 13 - Temporary Erosion and Sediment Control

H. Section 01 57 16 - Temporary Project Controls

I. Section 01 74 13 - Progress Cleaning

J. Section 01 74 23 - Final Cleaning

K. Section 02 41 00 – Demolition

L. Section 02 81 00 – Waste Management and Disposal

M. Section 02 82 00 - Asbestos Remediation

N. Section 02 84 00 - Hazardous Material Remediation

O. Section 03 30 00 – Reinforced Cast In-Place Concrete

P. Section 04 05 00 – Repair of Stone Masonry Walls

Q. Section 05 30 00 – Metal Decking

R. Section 05 52 13 – Pipe and Tube Railings

S. Section 07 10 00 – Weather Proofing

T. Section 31 00 00 – Earthwork

U. Section 31 37 00 – Stone and Riprap

V. Section 31 52 00 – Temporary Cofferdams

W. Section 32 31 13 – Fencing

X. Section 32 90 00 – Landscape Work

1.3 DESCRIPTION

A. Contractor shall furnish, install, and maintain all temporary facilities and utilities required for the Work and remove all temporary facilities and utilities upon completion of Work as described herein. Temporary facilities and utilities include, but are not limited to, construction light and power, water supply, telephone service, internet, sanitary facilities, storage sheds, signs, and field office.

1.4 REQUIREMENTS OF REGULATORY AGENCIES AND UTILITIES

A. Contractor shall comply with all federal, State, and local electric codes.

B. Contractor shall comply with federal, State, and local codes and regulations and with utility company requirements.

C. Contractor shall be responsible for notifying affected utility companies before starting Work and obtaining, maintaining and paying all fees and arranging all necessary inspections associated with required permits and approvals related to the Work.

1.5 CONSTRUCTION LIGHT AND POWER

A. Contractor shall make the necessary arrangements to provide and maintain temporary electric service which may be required for the performance of Work during the construction period. All costs associated with power connection and use will be paid for by the Contractor.

B. All required electrical work shall be performed by a licensed State of Connecticut electrician engaged by the Contractor.

C. The Contractor may utilize generators for temporary power throughout the Work. All generators shall operate within noise limits set forth in the Specifications. Generators required to operate overnight shall be enclosed or equipped with sufficient noise reduction devises so that the generators are not audible from the Limits of Work.

D. Power for temporary electrical service is available from the primary electrical service lines at the Site located outside the Limits of Work. The Contractor is responsible for coordination of service drop locations with the Owner and utility. The Contractor shall install secondary electrical service as needed to the Contractor Work areas in accordance with local, State, and federal electrical codes.

E. Any electrical service provided by the Contractor shall be of sufficient capacity and characteristic to supply the proper current for the various types of pumps and tools with motors, lights, and other required Work. All necessary permits, temporary supports, connections for utility wiring, panelboards, outlets, switches, lamps, lamp holders, circuit protection devices, controls, and accessories shall be provided by Contractor.

F. All wiring materials, devices, etc., installed as part of the construction light and power Work, shall be completely removed by Contractor as Work is completed and the temporary services are no longer required.

G. In the event that the Contractor utilizes artificial lighting, the Contractor shall utilize controls to prevent excessive light from impacting adjacent properties.

H. Contractor shall provide lighting to sufficiently illuminate work areas at their own discretion or as directed by the Engineer and at a minimum as required by 29 CFR 1926.56.

1.6 WATER SUPPLY

A. Contractor shall provide his own potable water in sufficient quantity and of sufficient quality for all potable needs of Owner, Engineer, and Contractor during the Work.

B. Contractor shall coordinate with the Connecticut Water Company to obtain a hydrant use permit, install a temporary water service, or obtain water from an

alternative off site source approved by the Owner and Engineer. Water from the raceway or adjacent ponds shall not be utilized. The Contractor is responsible for all permits, paying all metered rates and fees, backflow devices, and conveyance of water from service connections to Work areas. The Contractor is responsible for repair/replacement of any damage caused due to leaking connections or spills.

C. The quantity of water required for equipment and personnel decontamination, dust control, and other Site activities shall be determined by the Contractor

D. Contractor shall be responsible for removal of all temporary water supply lines and equipment at the completion of the project.

E. Water used for the Work that is acquired by the Contractor from an off Site source shall be at no additional cost to the Owner.

1.7 TEMPORARY TELEPHONE SERVICE

A. Contractor shall arrange for access to and use of, during working hours, one or more telephones in the vicinity of the Limits of Work for the purposes of making calls in the case of emergencies, and shall keep all personnel on the job, and the local jurisdiction informed of the location of such telephones. Cellular phones may be utilized provided that Contractor confirms cellular reception/operation is reliable at the Site at the start of Work. The Contractor's project superintendent, or at least one regular member of each shift, shall be charged with the responsibility of promptly calling emergency services when necessary.

B. The Contractor shall establish and maintain an email address for the project manager and project superintendent. The project manager and superintendent shall be able to send, receive, and view emails at all times while on Site throughout the duration of the project.

1.8 INTERNET SERVICE

A. Provide, maintain and pay for internet service to Contractor's field office and Engineer's field office at time of project mobilization.

B. Service shall be broadband cable, DSL, or cellular "Hot Spot" with wireless internet capabilities. Dial up services are not acceptable.

1.9 TEMPORARY SANITARY FACILITIES

A. Contractor shall provide sanitary facilities including hand wash station(s) for use by Contractor's employees, subcontractors, Owner and the Engineer, in compliance with laws and regulations, at the Site.

B. Contractor shall service, clean, and maintain such facilities and enclosures, at a minimum, on a weekly basis.

C. Separate facilities for men and women shall be provided.

D. Location of temporary sanitary facilities shall be within the Limits of Work.

1.10 SIGNS

A. Individual advertising signs will not be permitted.

B. The Contractor shall provide, erect, and maintain a project sign consistent with the template included in Attachment G. The location of the sign shall be as directed by the Engineer.

C. Signs needed to direct deliveries will be permitted with the approval of Owner as applicable.

D. Contractor shall furnish, erect, and maintain approved “Danger”, “Warning”, “Keep Out,” “Construction Site, Authorized Personnel Only”, “Hard Hats Required”, and “Visitors Must Check In” signs at Limits of Work gate. All such signs shall be sufficiently illuminated to make them visible at all times in accordance with Section 01 35 53 - Security Procedures.

E. Contractor shall furnish all signs for traffic control as required by Section 01 55 26 - Traffic Control.

1.11 FIELD OFFICE

A. No Contractor offices are permitted within Site buildings.

B. Prior to commencement of construction at the Site, the Contractor shall provide and maintain a watertight temporary office of sufficient size for his own use and use by the Engineer and Owner. The office shall be provided with electrical, heat, and cooling services.

C. Provide space for Project meetings, with table and chairs to accommodate up to 10 persons.

D. Provide separate private office within trailer, similarly equipped and furnished, for use of Engineer and Owner.

E. Owner And Engineer Office furnishings:

1. Drinking Fountain: Minimum one water cooler
2. One 54 x 30 inch desk, with three drawers
3. Two swivel arm chairs
4. Two straight chairs
5. One waste basket
6. One first aid kit

F. The office trailer shall be located in the area shown on the Drawings.

PART 2 PRODUCTS

2.1 MATERIALS, GENERAL

A. Materials must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of all applicable codes and standards including requirements of the Drawings and specifications.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Preparation

B. Removal

3.2 PREPARATION

A. Contractor shall consult with Engineer, review Site conditions and factors which affect asbestos, PCB, and hazardous material removal and demolition procedures and aids, including adjacent properties and public facilities that may be affected by execution of the Work.

B. Contractor shall provide a minimum of 48-hour notice requesting a shut-down or turn-on of Site utilities and the required minimum notification to other local, State, or private utilities as applicable.

3.3 REMOVAL

A. Contractor shall remove temporary facilities completely and dispose of materials upon completion of the Work or as directed by Owner.

END OF SECTION

SECTION 01 50 10 -TEMPORARY WATER CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Description

D. Adherence to Regulatory Conditions

E. Demobilization/Remobilization Due to Inclement Weather

F. Sequence

G. Submittals

H. Maximum Water Control Discharge Rate

I. Protection of Work from Flood Conditions

1.2 RELATED SECTIONS

A. Section 00 70 00 – Standard Conditions

B. Section 00 73 00 – Supplemental Conditions

C. Section 01 11 13 – Work Covered by Contract Documents

D. Section 01 33 00 – Submittal Procedures

E. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

F. Section 01 35 43 – Environmental Procedures

G. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

H. Section 01 50 00 – Temporary Facilities and Control

I. Section 01 57 13 – Temporary Erosion and Sediment Control

J. Section 01 57 16 – Temporary Project Controls

K. Section 02 41 00 – Demolition

L. Section 02 81 00 – Waste Management and Disposal

M. Section 03 30 00 – Reinforced Cast In-Place Concrete

N. Section 04 05 00 – Repair of Stone Masonry Walls

O. Section 05 30 00 – Metal Decking

P. Section 05 52 13 – Pipe and Tube Railings

Q. Section 31 00 00 – Earthwork

R. Section 31 37 00 – Stone and Riprap

S. Section 31 52 00 – Temporary Cofferdams

T. Section 40 05 59 – Slide Gate

1.3 REFERENCES

A. General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

B. Connecticut Department of Energy and Environmental Protection's Guidelines for Soil Erosion and Sediment Control dated 2002.

C. Connecticut Department of Energy and Environmental Protection's Stormwater Quality Manual dated 2004.

D. EPA – Office of Water, Storm Water Management for Construction Activities, September 1992.

1.4 DESCRIPTION

A. This Section specifies the removal and control of water within the raceway to permit all excavation, construction, installations, and repairs to be performed in dry and stable conditions. Work includes the furnishing of all labor, equipment, supplies, materials and utilities required for the operation, maintenance and control of water flows such that the demolition of the raceway cover/top and existing concrete dam, construction of the new, relocated concrete dam (Paper Mill Pond Dam), in-filling/repointing of stone masonry walls, installation of scour protection, and excavation and/or backfilling operations within the raceway can proceed unhindered by water and flow into or through the Work area. Water control shall also extend to all provisions necessary to control water from the Paper Mill Pond, the downstream raceway, water infiltration, and surface drainage from upland areas from flowing into, disrupting, and damaging the Work area.

B. All Work shall be performed in accordance with the Drawings, Specifications and all applicable federal, State, and local laws, regulations, permits and authorizations and to the satisfaction of the Town and the Engineer.

C. The raceway conveys water as part of the Upper Hockanum River. The river has a contributing drainage of about 17 square miles. While the raceway has capacity to accommodate large floods approaching the 100 year event (Annual Exceedance Probability [AEP] of 0.01), such flooding will cause high water levels within the raceway. Work will not be able to progress under such flooding conditions. Please refer to Attachment J for Hydrologic and Hydraulic characteristics of the raceway.

D. The water level in Paper Mill Pond and the raceway will be drawn down by opening the slide gate at the existing dam, located near the downstream end of the raceway. Approximate hydraulic characteristics of the resultant water levels, under a range of discharges, are presented in Attachment J for informational purposes. The Contractor shall be responsible for maintaining lowered water levels in the pond and raceway, to complete the Work, through a combined means of gravity flow through temporary piping and a cofferdam, as shown on the Drawings. In addition, water control may be supplemented via sumps and pumps as necessary to perform the Work in dry conditions.

E. The Contractor is hereby notified that the Town will, through the operation of the existing slide gate, assist the Contractor whenever possible in his water control efforts. However, such assistance is limited by the configuration/condition of the existing gate and outlets conduit, as well as the slope of the raceway channel bottom. The Town also has no control over the rate of inflow into Paper Mill Pond from the watershed. The Town makes no guarantees as to the water levels in the pond or raceway during the Work.

F. Contractor shall be responsible for determining the means and methods of implementing water control during the Work, except as specifically stated herein and in other Sections. The Engineer will monitor conditions at the Site and the effects of water levels and flows on the Work. If, in the Engineer's opinion, the presence of water has the potential to create a deleterious effect on the Work, then the Contractor shall take measures to control such water to the satisfaction of the Engineer at no additional cost to the Owner.

G. The control of water shall consist of installing such provisions, as needed, to divert, reduce, or temporarily stop water which may be flowing into, on, or through the Work area. The need for control of water may change over the course of the Work depending on the activities underway, as well as rainfall/runoff conditions encountered, which may change the level of the reservoir. Pumping, siphoning, and/or diversion channels may be required for certain activities.

H. A temporary cofferdam will be necessary for completion of the Work. The temporary cofferdam shall be provided in accordance with Section 31 52 00 – Temporary Cofferdams. Temporary surface water control shall be performed in concert with the temporary cofferdam.

I. Water control measures shall be in operation until all Work within those areas of the work zone subject to interference by water is complete and accepted by the Engineer.

J. Contractor shall be allowed to temporarily stop water flow through the raceway to facilitate the performance of the Work for a maximum of 6 hours. Water flow stoppages greater than 6 hours shall be coordinated with the Engineer and Owner.

K. Contractor shall provide sedimentation control and recharge in accordance with all applicable Federal, State and local regulations and laws. All water shall be passed through appropriate and adequate sediment and/or filtration measures such that the effluent meets the standards specified below. Water diverted or pumped by the Contractor shall be discharged into the downstream channel and shall maintain water quality standards. Adequate provision for erosion control at the discharge point shall be provided as part of the Work of this Section.

1.5 ADHERENCE TO REGULATORY CONDITIONS

A. Work shall comply with all Federal, State, and local rules, regulations, and laws and permits or authorizations issued by the State of Connecticut Department of Energy & Environmental Protection (DEEP), the Town of Vernon, the U.S. Army Corps of Engineers. All work necessary to comply with such requirements shall be provided without additional cost to the Owner.

B. The Owner will obtain the permits related to the removal of the raceway cover and existing dam and construction of the new dam system. These permits include a Connecticut Department of Energy and Environmental Protection (DEEP) Inland Water Resources Division (IWRD) Dam Construction Permit (DEEP-IWRD-APP-103) and a United States Army Corps of Engineers Category 1 Certification Form. Drafts of these permit applications are included in Attachment I for reference. These permit approvals will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within these permits.

C. Contractor shall be responsible for the procurement of all other required permits and licenses, paying of all associated charges, fees and taxes and providing all notices necessary to perform the Work. Copies of all required permits and licenses shall be provide to the Engineer prior to the beginning of the Work.

D. The Contractor shall be responsible for complying with all permit conditions for the installation, maintenance, and removal of all erosion and sedimentation control measures.

E. No Work shall commence until erosion and sedimentation control measures are in place to the satisfaction of the Engineer.

1.6 DEMOBILIZATION / REMOBILIZATION DUE TO INCLEMENT WEATHER

A. Water control is critical during the performance of the raceway work. The narrow raceway is subject to inundation by waters emanating from the Upper Hockanum River and Paper Mill Pond.

B. Certain weather conditions (such as an extended period of heavy rainfall and/or a weather event such as a hurricane) could cause a significant rise in the level of the river and pond and potentially inhibit proposed work. The Owner does not control the inflow to Paper Mill Pond, as such, the pond can rise quickly. The Contractor must design his temporary water control measures to accommodate for rapid rising of the pond. Appropriate water safety precautions shall be provided by the Contractor as per OSHA regulations as needed for work in and around the pond and downstream channels.

C. The Contractor is hereby notified that responses to such events are the Contractor's responsibility and no extra payment shall be made. The Contractor shall make provision for contingencies to deal with inclement weather, the cost of which shall be incidental to other pay items. In the event of rising waters and increasing flow, the Contractor may be required to act rapidly to protect the work area (i.e. new concrete weir and outlet structure), including removal of personnel and equipment from the raceway and other potentially affected areas. This may also include partial or full removal of the temporary cofferdam. The Contractor may have to demobilize from the potentially affected areas on a temporary basis. Prior to leaving the area, the Contractor shall take such steps as are necessary to protect completed work and work in progress and to remove all equipment and materials from potentially inundated areas. The Contractor shall be responsible for any loss or damage to his work, equipment, or material. After water levels/flows have receded, the Contractor shall remobilize to the site at no additional cost. Remobilization will include all effort required to restart the Work.

D. To reduce the chance of high water levels / flows affecting the Work, the Contractor is urged to pay particular attention to weather forecasts for the area and to schedule work in vulnerable areas for periods which are anticipated to be relatively dry. The Contractor shall sequence his work, particularly work on the new dam in such a manner as to reduce the potential for inundation of the work area.

1.7 SEQUENCE

A. Phase 1 Temporary Water Control –Right Portion of New Dam and Outlet Works: This phase shall encompass all Temporary Water Controls necessary to remove the concrete cover/top of the raceway, demolish the existing concrete dam and gate, and complete the work on the right portion (orientated downstream) of the new concrete weir and slide gate outlet, as shown on the Drawings. The scope of this phase shall include furnishing, installation, and maintenance of a temporary cofferdam consistent with Section 31 52 00 – Temporary Cofferdams. The cofferdam system shall serve to permit the removal of the existing dam and construction of the new dam (weir) and slide gate intake while the pond (just upstream of Grove Street Bridge) is maintained at a water surface level at or below Elevation 474.0 feet (NAVD88). As depicted on the Drawings, the maximum top Elevation of the cofferdam is to be 475.0 feet. As shown on the Drawings, it is recommended that the flow discharged from the cofferdam should be conveyed in a closed temporary pipe through the work area and down to the break in slope of the raceway near the location of the existing dam. This distance is approximately 350 feet. The cofferdam system may utilize proprietary systems such as the Portadam system or approved equal. Other Contractor-proposed

cofferdam systems may be submitted for approval. In all cases, the provision of the cofferdam system shall include all needed pumps, power, and accessories.

B. Phase 2 Temporary Water Control – Left Portion of New Dam: This phase shall encompass all Temporary Water Controls necessary to complete the work on the left-hand portion of the new concrete weir. The scope of this phase shall include maintenance and removal of a temporary cofferdam consistent with Section 31 52 00 – Temporary Cofferdams. The pond shall be maintained at an Elevation not to exceed Elevation 474.0 feet via gravity flow from the temporary cofferdam and conduit outlet supplemented as necessary by the pump system provided for Phase 1.

1.8 SUBMITTALS

A. Not less than ten (10) days prior to the scheduled start of the raceway work including removal of the raceway cover/top, the Contractor shall submit a Water Control Plan to the Engineer for review and approval. The submittal shall include as a minimum the following items:

1. The Contractor's proposed design, sequence of operation, maintenance and supervision of the water control systems, as needed for each phase of the work.

2. Design of the temporary cofferdam shall be submitted under Section 31 52 00 – Temporary Cofferdams.

3. Contractor's proposed contingency plan for additional water control measures in the event of a cofferdam or pumping system failure. Plan shall include monitoring, instrumentation, on-call repair, etc.

4. Contractor's proposed contingency plan for potential storm emergency conditions (i.e. anticipated heavy rainfall). The contingency plan should address, but not to be limited to, measures for pre-storm water releases from the Paper Mill Pond, handling flooding of the work area, removing equipment and materials from the work area.

1.9 MAXIMUM WATER CONTROL DISCHARGE RATE

A. To protect the downstream channel and reduce erosion, the total flow rate from all Contractor water control operations into the downstream area shall be such that significant downstream erosion, flooding, or other damage is avoided, in the opinion of the Engineer. The Contractor’s water control plan shall not lead to an increase in downstream flood impacts. However, the Contractor should, at all times, strive to maintain the target normal, temporary construction operating pool elevations noted above.

1.10 PROTECTION OF WORK FROM FLOOD CONDITIONS

A. The Contractor shall take all such precautions necessary to protect the work area, either completed or incomplete, from flood waters and flows which would either damage the Work or cause a delay to the Work.

B. In the event of significant natural flooding, the Contractor may need to actively release water from the pond upstream of the entrance of the raceway via dismantling of the temporary cofferdam, or via pumping or siphoning, depending upon the stage of construction of the new weir/dam and slide gate outlet. If extensive flooding is expected, the Contractor shall implement his/her contingency plan. The release of water shall not exceed the discharge rates described above or in the related permits. The Contractor shall remove all equipment and erosion-susceptible material from areas liable to be inundated or otherwise impacted by flooding. The Contractor shall secure the work area and make all efforts to protect completed and incomplete work.

PART 2 - PRODUCTS

2.1 SECTION INCLUDES

A. Pumps, Hoses, Siphons

B. Pipe

C. Sandbags

2.2 PUMPS, HOSES, SIPHONS

A. Pumps, hoses, or siphons shall be sized appropriately and shall be maintained in good working order by the Contractor

B. Pumps shall be sized appropriately by the Contractor and shall operate in a manner which does not create a nuisance to abutters (i.e. quietly and without significant exhaust).

C. Electric power service is not currently available at the Site. Fuel for pumps and generators must be located such that fuel cannot be released into the pond or raceway. Secondary containment shall be provided for gasoline or diesel-powered pumping equipment. All appropriate precautions shall be taken to protect the reservoir and downstream resource areas. Electrical generators, fuel supplies or other supplementary equipment required for operation of pumps shall not be allowed within the raceway and shall be equipped with secondary containment.

2.3 PIPE

A. Pipes used for water control and/or diversions shall be sized appropriately and shall be in good condition without leaks or cracks. Pipe pressure ratings shall be adequate for

static head loading when pressure flow is expected. Pipe joints shall be watertight and installed as per the manufacturer's recommendations.

2.4 SANDBAGS

A. Sandbags shall consist of polypropylene bags about 14" to 18" wide, and 30" to 36" deep. Sand bags shall be filled with Select Sand Fill consistent with Section 31 05 13 – Soils and Aggregate for Earthwork.

PART 3 - EXECUTION

3.1 SECTION INCLUDES

A. General

B. General Water Control Methodology Limitations

3.2 GENERAL

A. Contractor shall be responsible for the means and methods to control water flows and maintain dry and stable work areas within the raceway and for compliance with all permit conditions and performance criteria.

B. Contractor shall submit a Water Control Plan to the Engineer for review and approval prior to the start of the raceway work including removal of the raceway cover/cap and dam. Contractor may propose alternative water control methods during the course of the Work. All alternative water control methods shall be pre-approved by the Engineer prior to implementing.

C. Contractor shall lower the levels in the Paper Mill Pond via pumping or by gravity when precipitation events are forecasted at no additional cost to the Owner.

D. Electric power service is not currently available at the Site. The Contractor shall provide an electrical generator and related equipment with output capacity sufficient to maintain continuous operation of the water control systems.

E. The Contractor shall maintain ready access to back-up electrical generators, fuel, pumps, hoses and related equipment and supplies with output capacity sufficient to maintain continuous operation of the primary water control system and backup system in the event the original water control equipment or power source(s) which is in use becomes inoperable. The back-up generator, pumps and necessary equipment and supplies shall be capable of rapid deployment for replacement of the inoperable equipment.

F. The Contractor shall take all reasonable and prudent precautions to provide and maintain proper equipment and facilities to control and divert water. Extra vigilance in monitoring any cofferdam structure is vital since dislodgement of such a structure could cause injury to workers within.

G. Water control systems shall be operated continuously during removal of the raceway cover, demolition of the existing dam and construction of the new dam. The operation time may include nights, weekends, holidays and other times when work is not otherwise being performed on the Site. The Contractor shall be responsible for protecting his equipment from damage due to vandalism. Appropriate alarm systems (autodialer, etc.) shall be provided to provide alert and notification in the event of water control system failure.

H. Where the Contractor proposes to remove water from the bottom of the reservoirs by sumping as approved by the Engineer, the sump shall be surrounded by a suitable filter to prevent removal of soil fines. Pumping from sumps which remove fines from the soil shall be immediately terminated and the dewatering method revised accordingly.

I. Water control shall account for the range of flow reasonably expected into and out of the Paper Mill Pond. Pumps, siphons, pipes, channels, etc. shall be sized appropriately. Any cofferdam/diversion barrier shall be constructed of such materials and to such extents that it will withstand the forces and pressures exerted by flows and depths of a reasonable expected magnitude. The cofferdams/diversion barriers shall be compatible with other dewatering, water control, and sedimentation control procedures. Dewatering equipment shall be provided as needed to remove water from the interior areas of cofferdams/diversion barriers.

J. Contractor shall make provisions to remove any impediments or obstructions (e.g. debris, material, equipment, etc.) to flow through water conveyance structures expeditiously and in the event of a flood event which threatens to overwhelm the water control system or cause increased water levels which might lead to damage at the work areas.

K. All cofferdams/diversion barriers constructed by the Contractor shall be completely removed upon the completion of the Work. All material shall be legally disposed of off-Site at an Owner approved facility at the Contractor's expense. No material shall be left within the Work area.

L. Pumps shall be operated in such a way as to not disturb abutters (e.g. noise). Adequate noise suppression shall be provided. Generators, pumps, or other equipment shall adhere to the noise limits outlined in Section 01 57 16 – Temporary Project Controls. Pump intakes shall be placed so as to reduce the potential for sediment entrainment and pump discharge points shall make provisions for reducing erosion potential through energy dissipation, riprap protection, etc.

M. The Contractor shall install and maintain temporary staff gages and/or measurement points as necessary to provide for water elevation measurements. Temporary staff gage markings shall be in feet and referenced to NAVD 88. One gage shall be installed in Paper Mill Pond to record levels on a daily basis. Levels shall be recorded in a log and a copy provided to the Engineer each day.

N. Sand bags may be used in the raceway to direct runoff, leakage, etc. and shall be

included as Work of this Section.

3.3 GENERAL WATER CONTROL METHODOLOGY LIMITATIONS

A. In order to maintain the quality of water control effluent and to prevent the discharge of unacceptable quantities of sediment, the following minimum restrictions shall be observed:

1. Intakes for pumps and siphons will not be allowed to rest directly on the pond bottom. To prevent this, a frame may be attached to the intake to elevate the intake off the bottom, or the intake may be attached to a float to maintain the intake at a height determined by the Contractor above the bottom of the pond to prevent unacceptable discharge of sediment.

2. When sumps are required, the intake must be placed within a perforated pipe and the annular space between the pipe and the sump pit (as well as the bottom of the pit) must be filled with Crushed Stone as specified in Section 31 05 13 – Soils and Aggregates for Earthwork. Filter fabric may also be used if necessary.

3. Floating turbidity curtains may be deployed to act as a filter within the pond pool or to lengthen flow paths with impervious curtains.

4. Discharge water from sumps shall be passed through "Silt socks," "Dirt Bags," or other proprietary devices which reduce turbidity.

3.4 DISCHARGE OF WATER

A. All water discharged into State waters shall meet the following standards:

1. Solids - None in concentrations or combinations which would impair designated uses; none aesthetically objectionable; none which would significantly alter the physical or chemical composition of the bottom; none which would adversely impact aquatic organisms living in or on the bottom substrate.

2. Color and Turbidity - None other than of natural origin.

END OF SECTION

SECTION 01 55 26 - TRAFFIC CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Summary

D. Submittals

E. Quality assurance

F. Traffic Control

G. Required Notifications

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittals

B. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 35 53 - Security Procedures

D. Section 01 50 00 - Temporary Facilities and Controls

E. Section 01 50 10 – Temporary Water Control

F. Section 02 41 00 – Demolition

G. Section 02 81 00 – Waste Management and Disposal

H. Section 02 82 00 - Asbestos Remediation

I. Section 02 84 00 - Hazardous Material Remediation

J. Section 03 30 00 – Reinforced Cast In Place Concrete

K. Section 31 00 00 – Earthwork

L. Section 31 37 00 – Stone and Riprap

M. Section 32 31 13 –Fencing

N. Section 32 90 00 – Landscape Work

1.3 REFERENCES

A. United States Department of Transportation. 2009, revision 2012. Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways. 2009, revised May 2012.

B. State of Connecticut Department of Transportation (CTDOT) Traffic Control Signal Design Manual, September 2014.

C. United States Department of Transportation. 2009. Guidelines for Temporary Traffic Control in Work Zones, March 2009.

1.4 SUMMARY

A. Contractor shall furnish all labor, materials, equipment, tools, and services necessary to adequately safeguard the workers, Owner's employees, and public from construction hazards with minimum of inconvenience. Work includes but is not limited to the following:

1. Preparation of a traffic control specific section with details and maps for inclusion in the Project Work Plan.
2. Notification of agencies and entities having jurisdiction.
3. Temporary closure of Brooklyn Street as depicted on the Drawings.
4. Supply, erection and removal of temporary construction and traffic control signs in accordance with the Drawings.
5. Installation and removal of temporary pavement markings and markers, traffic control devices, and pedestrian walkways and control devices.
6. Installation and removal of barriers, barricades, and other excavation protection measures.
7. Coordinating Work with utility locating services (i.e., "Call Before You Dig" contacts), on-Site facility and operations personnel, and all other agencies having jurisdiction.

1.5 SUBMITTALS

A. Contractor shall prepare a traffic control specific section with details and maps for inclusion in the Project Work Plan within 10 days of the Notice to Proceed.

B. In accordance with the requirements of Section 01 33 00 – Submittal Procedures, the Contractor shall submit a Project Work Plan with traffic control detail drawings, and other information related to traffic and pedestrian control devices including, but not limited to, planned trucking routes to and from the Site, employee parking, delivery vehicle staging, demolition and construction activities and control of on-Site traffic, coordination of access into/out of the Site, and

control measures and procedures for the temporary closure of Brooklyn Street which conforms to all requirements of these Specifications and local and State agencies.

C. Contractor is responsible for obtaining required approvals from local, State, and/or federal officials regarding the placement of traffic control devices and signs, which may impact public and private roadways associated with the Work.

D. The Town of Vernon has received approvals for the temporary closure of Brooklyn Street throughout the completion of on-Site activities.

1.6 QUALITY ASSURANCE

A. Contractor shall be responsible for the continuous maintenance of all traffic control devices as specified by the Project Work Plan. Contractor shall conduct surveillance operations periodically each calendar day sufficient to assure himself and Engineer that the devices are reasonably and adequately maintained in accordance with local, State, and federal requirements.

1.7 TRAFFIC CONTROL

A. Contractor shall submit traffic control details for review and written approval by the Owner and Engineer. The Owner and Engineer reserve the right to observe the traffic control details in use and to make any changes as field conditions warrant. Changes to the Project Work Plan required by the Owner and Engineer shall be performed by the Contractor at no additional cost to the Owner.

B. With the exception of the section of Brooklyn Street to be temporarily closed as indicated on the Drawings and activities related to the abandonment/capping of utilities, no Work or temporary staging of construction and/or transport vehicles will be allowed on the streets of the Town of Vernon or outside the Limits of Work.

1.8 REQUIRED NOTIFICATIONS

A. Contractor shall conduct notifications in accordance with CTDOT and Town of Vernon rules and regulations and as directed by the Engineer. Contractor shall provide documentation of all notifications to the Engineer.

B. Contractor through Engineer shall notify Owner of all operations that may impact Owner's on-Site activities and access routes including, but not limited to, Former Amerbelle Mill – Phase 1 activities.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Traffic Control Devices

2.2 TRAFFIC CONTROL DEVICES

A. All traffic control devices shall conform to the requirements of Local Ordinances and national standards in the MUTCD. These devices include, but are not limited to, flag units, police details, construction signs, channelizing devices, barricades, delineators, and lighting devices. All signs conveying messages during darkness shall use reflectors or be illuminated. No signs or supports shall bear any commercial advertising.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Access to Adjacent Properties and On-Site Facilities

B. Temporary Closure of Brooklyn Street

C. Traffic Coordination with Site Personnel and/or Other Contractors

D. Construction Parking Control

E. Trucking Routes

F. Flagging/Police Details

G. Pedestrian Safety

H. Truck Idling Requirements

3.2 ACCESS TO ADJACENT PROPERTIES AND ON-SITE FACILITIES

A. Contractor shall maintain access to adjacent properties and on-Site facilities located outside the Limits of Work at all times unless approved by Owner and Engineer.

B. Provide and maintain access to on-Site equipment, materials, and appurtenances outside the Limits of Work free of obstructions.

3.3 TEMPORARY CLOSURE OF BROOKLYN STREET

A. Contractor shall notify and coordinate the temporary closure of Brooklyn Street with the Owner and local officials.

B. Contractor shall supply and install road closed signage. Signage shall be installed on fixed supports and, at a minimum, shall be installed at the following locations:

1. On east and west side of Brooklyn Street immediately outside the Limits of Work.
2. On the west side of East Main Street, approximately 120 feet north of the East Main Street and Brooklyn Street intersection; and
3. On the south side of Brooklyn Street, approximately 200 feet west of the western end of the Brooklyn Street closure.

C. Road closure shall be performed in such a manner as to allow access into the Limits of Work for construction and emergency vehicles. At a minimum, road closure devices shall include:

1. High visibility road closed signage;
2. Type III barricades equipped with Type B high intensity flashing warning lights; and
3. Temporary 8 foot high chain link fencing.

3.4 TRAFFIC COORDINATION WITH SITE PERSONNEL AND/OR OTHER CONTRACTORS

A. Contractor shall coordinate the traffic routing Work with that of Site personnel and other Work crews in the same or adjacent areas. Contractor shall coordinate the construction traffic routes with the daily operations of the Owner and adjacent properties in the vicinity of the Site. The Contractor shall provide detours as necessary for unimpeded traffic flow.

3.5 CONSTRUCTION PARKING CONTROL

A. Contractor shall make arrangements to secure parking for non-essential personal vehicles driven by his employees, subcontractors, and visitors at a location within the Site. Designated parking for employee vehicles may be permitted on-Site outside the Limits of Work at a location approved by the Owner and Engineer. If Contractor chooses to utilize off site parking, Contractor is responsible for acquiring all necessary permits and approvals for off site employee, subcontractor, and visitor parking at no additional expense to the Owner.

B. Vehicles and equipment in continuous or frequent use may be operated or parked in the same traffic lane as the Work obstruction. Construction equipment not actively engaged in the Work and employee vehicles shall not be parked in the vicinity of the Work in such a manner as to further restrict or obstruct traffic flow.

3.6 TRUCKING ROUTES

A. Contractor shall develop a trucking route for all trucks accessing the Site for deliveries to the Site and transportation of supplies, equipment, materials, and other miscellaneous items from the Site. Trucking routes to and from the Site shall be approved by the Owner and Engineer prior to mobilization to the Site. The Contractor shall be responsible for obtaining approval as necessary from the Town of Vernon or other agencies as required for his/her established truck routes.

B. Trucking routes shall be designed to minimize traffic to downtown areas to the north of the Site.

3.7 FLAGGING/POLICE DETAILS

A. Flaggers/Police Details shall be required and equipped as required by local bylaws and regulations. These areas may include but are not limited to:

1. Where workers or equipment intermittently block a traffic lane.

2. When trucks or equipment enter or leave the Work site from an adjacent traffic lane.

3. When trucks or equipment back into or out of the Limits of Work.

4. Where plans or permits allow the use of one lane for two directions of traffic.

5. Wherever the safety of the public and/or workers determine there is need.

6. Whenever there is Work within a public street.

7. Whenever there is work immediately adjacent to on-Site access roads or parking areas.

3.8 PEDESTRIAN SAFETY

A. Contractor shall maintain safe and adequate pedestrian zones including walkways and control devices.

3.9 TRUCK IDLING REQUIREMENTS

A. Contractor shall comply with Regulations of Connecticut State Agencies (RCSA) 22a-174-18 regarding truck idling.

B. No person shall operate the engine of a motor vehicle while said vehicle is stopped for a foreseeable period of time in excess of 5 minutes. This regulation shall not apply to:

1. Vehicles being serviced, provided that operation of the engine is essential to the proper maintenance for repair thereof.

2. Vehicles engaged in the delivery or acceptance of goods, wares, or merchandise, for which engine-assisted power is necessary and substitute alternate means cannot be made available.

3. Vehicles engaged in an operation for which the engine power is necessary for an associated power need other than movement and substitute alternate power means cannot be made available, provided that such operation does not cause or contribute to a condition of air pollution.

END OF SECTION

SECTION 01 57 13 – TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Description

D. Submittals

1.2 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work

B. Section 01 35 43 - Environmental Procedures

C. Section 01 50 00 - Temporary Facilities and Controls

D. Section 01 51 00 – Temporary Water Control

E. Section 01 74 00 - Final Cleaning

F. Section 02 41 00 – Demolition

G. Section 02 81 00 – Waste Management and Disposal

H. Section 02 82 00 - Asbestos Remediation

I. Section 02 84 00 - Hazardous Material Remediation

J. Section 03 30 00 – Reinforced Cast In Place Concrete

K. Section 31 00 00 – Earthwork

L. Section 31 52 00 – Temporary Cofferdams

M. Section 32 90 00 – Landscape Work

1.3 REFERENCES

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

B. General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

C. Connecticut Department of Energy and Environmental Protection's Guidelines for Soil Erosion and Sediment Control dated 2002.

D. Connecticut Department of Energy and Environmental Protection's Stormwater Quality Manual dated 2004.

E. EPA – Office of Water, Storm Water Management for Construction Activities, September 1992.

1.4 DESCRIPTION

A. Contractor shall furnish all labor, materials, tools, supervision, transportation, equipment, and incidentals required to install, inspect, maintain, repair, and replace erosion prevention and sediment control measures as specified herein, as shown on the Drawings, and as necessary to complete the Work.

B. Contractor shall install and maintain a stabilized construction entrance at the Grove Street entrance as shown on the Drawings to prevent the off-Site migration of sediments and soil.

C. As described in Section 01 50 10 – Temporary Water Control, Contractor shall be responsible for mitigating the entrainment of fines and sediments in surface water during the use of the temporary water control measures to allow the Work within the raceway to be performed in dry and stable conditions.

D. All work performed by the Contractor shall be consistent with the requirements of the permits and approvals necessary to complete the Work.

E. Temporary erosion and sedimentation control measures include, but are not limited to, berms, straw bales, , silt sacks, stockpile covering, filter bags, and other applicable Best Management Practices (BMPs) approved by the Engineer.

F. Contractor is responsible for inspecting temporary erosion and sedimentation control measures at least once per week and 24 hours after rain events greater than 0.25 inches in intensity. The results of these inspections shall be documented in the Contractor's Daily Activity Reports. Any deficiencies identified during these inspections shall be addressed immediately by the Contractor at no additional cost to the Owner.

G. The Owner will obtain an Agent Issued Permit from the local Inland Wetlands Commission for the Work in the upland portions of the Site. This permit will be provided to the Contractor upon approval. Contractor shall be responsible for complying with all requirements and conditions within these permits.

H. Contractor is responsible for the removal and disposal of all temporary erosion and sedimentation control measures upon completion of the Work or as directed by the Engineer at an Owner approved disposal facility.

1.5 SUBMITTALS

A. Contractor shall include the details of erosion and sedimentation control measures including material specifications/cut sheets specified in this Section as part of the Project Work Plan specified under Section 01 33 00 – Submittal Procedures.

B. No demolition, earth disturbing activities, dam construction or removal activities, material delivery, or clearing shall be performed prior to installation of the erosion and sedimentation control measures consistent with the Engineer-approved Project Work Plan.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Berms

B. Silt Sacks

C. Polyethylene Sheeting

D. Bales

E. Silt Fence

F. Filter Bags

2.2 BERMS

A. Berms may be used to collect or re-direct stormwater runoff away from Work areas. Commercially available berms may be used. Berms may be soil berms with clean imported soil; however, the soil berms shall be lined with 6-mil polyethylene plastic sheeting to prevent contaminating the soil with potentially impacted runoff.

2.3 SILT SACKS

A. Silt Sacks shall be manufactured from woven polypropylene geotextile and sewn by a double needle thread machine using a high strength nylon thread.

B. Silt Sacks shall have the following minimum properties:

PROPERTIES	TEST METHOD	UNITS	SPECIFIED VALUE
Grab Tensile	ASTM D4632	Lbs.	315
Grab Elongation	ASTM D4632	%	15
Puncture	ASTM D4833	Lbs.	140
Mullen Burst	ASTM D3786	psi	800
Trapezoid Tear	ASTM D4533	Lbs.	125 x 150
Permittivity	ASTM D4491	sec^{-1}	0.70

C. Silt Sacks shall consist of a Series I, Regular Flow Type C, Silt Sack manufactured by ACF Environmental of Richmond, Virginia or an Engineer-approved equivalent.

2.4 POLYETHYLENE SHEETING

A. Polyethylene sheeting utilized to cover stockpiles shall be, at minimum, 6-mil polyethylene sheeting.

2.5 BALES

A. Straw Bales shall be baled within 12-months of use and the minimum dimension of any bale shall be 18 inches. Each bale shall be bound with a minimum of two strips of nylon bale twine or wire. Twine or wire shall be sufficiently strong to act as handles when placing in position by hand.

B. The bale shall have a minimum weight of 60 pounds and shall be composed entirely of vegetative matter.

C. Stakes for anchoring bales in landscaped areas shall be a minimum of 36 inches long and made either from hardwood with dimensions of at least 1.5-inches square or steel posts with a minimum weight of 0.5 pounds per linear foot.

2.6 SILT FENCE

A. Silt Fence shall be a pervious sheet of polypropylene, nylon, polyester, ethylene or similar filament and shall be non-rotting and acid and alkali resistant.

B. Posts shall be a minimum of 42-inches long and made of either hardwood stakes with minimum dimensions of 1.5-inches square or steel posts with projections for fastening.

C. Silt Fence shall meet the following requirements:

PROPERTY	TEST METHOD	MINIMUM VALUE
Apparent Opening Size	ASTM D4751	Less than 0.9 mm and greater than 0.6 mm
Permittivity	ASTM D4491	0.05 sec-1
Grab Tensile Strength	ASTM D4632	100 lbs.
U.V. Stability	ASTM D4355	70% after 500 hours of exposure

2.7 FILTER BAGS

A. Filter Bags shall be made from non-woven geotextile material sewn with high strength double stitched "J" type seams.

B. Filter Bags shall be capable of trapping sediments with a micron size larger than 150 microns.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Bale Installation

B. Silt Fence and Bale Installation

C. Silt Sack Installation

D. Filter Bag Installation

E. Stockpile Covering

F. Construction of Stabilized Construction Entrance

G. Provisions for Erosion Control During Construction

3.2 BALE INSTALLATION

A. Bales shall be installed in the existing paved areas shown on the Drawings.

B. Within the existing paved areas:

1. Bales shall be installed in a single row with ends tightly abutting and the bindings oriented around the sides.

2. A layer of burlap shall be installed beneath the entire footprint of each Bale.

3.3 SILT FENCE AND BALE INSTALLATION

A. Silt Fence and Bales shall be installed in the existing landscaped areas shown on the Drawings.

B. Silt Fence and Bales shall be installed within a minimum 4-inch deep trench with the Silt Fence directly upgradient of the protected area.

C. Posts for the Silt Fence shall be driven to a minimum of 12-inches below the ground surface. Posts shall not be installed more than 10 feet apart. Silt Fence shall be secured the posts per the manufacturer's instructions.

D. The bottom flap of the Silt Fence shall extend under the Bale.

E. Where two ends of a Silt Fence join, the ends shall be overlapped a minimum of 12 inches.

F. Bales shall be installed within the same trench and immediately upgradient of the Silt Fence. Bales shall be installed in a single row with ends tightly abutting and the bindings oriented around the sides

G. Each Bale shall be secured with two stakes driven a minimum of 18-inch below grade.

H. Backfill the upgradient side of the Bales with the excavated material generated during excavation of the trench. Backfill shall be hand tamped or machine compacted.

3.4 SILT SACK INSTALLATION

A. Silt Sacks shall be installed by removing the catch basin grate and placing the sack in the opening. Approximately six (6) inches of the sack shall be held outside the frame. Replace the grate to hold the sack in place.

B. Silt Sacks shall be removed by placing two (2) pieces of one-inch diameter rebar through the lifting loops on each side of the sack to facilitate lifting of the sack.

C. Silt sack shall be emptied by placing the unit where the contents will be collected. Place the rebar through the lift straps (connected to the bottom of the sack) and lifting. After the contents have been emptied the sack shall be rinsed and placed back in the basin.

3.5 FILTER BAG INSTALLATION

A. All water removed/pumped from disturbed areas during the construction of the new dam shall be directed to a Filter Bag(s) prior to discharging to downgradient areas within the raceway.

B. Filter Bag(s) shall be staged within the limits of the raceway and the location of the Filter Bag(s) shall be pre-approved by the Engineer.

C. Additional Filter Bag(s) installation details and maintenance requirements are provided in the Drawings.

3.6 STOCKPILE COVERING

A. All material stockpiles shall be covered at the end of the work day with a layer of polyethylene sheeting weighted down with sand bags or equivalent to the satisfaction of the Engineer.

3.7 CONSTRUCTION OF STABILIZED CONSTRUCTION ENTRANCE

A. Contractor shall provide all equipment, materials, and labor to construct a stabilized construction entrance at the Grove Street gate as shown on the Drawings prior to disturbance of Site materials.

B. Contractor shall be responsible for inspecting, maintaining, and repairing the stabilized construction entrance at no additional cost to the Owner.

3.8 PROVISIONS FOR EROSION CONTROL DURING CONSTRUCTION

A. Contractor shall implement and maintain the minimum erosion and sedimentation control measures specified herein and shown on the Drawings. The Engineer shall periodically observe and inspect erosion and sedimentation control structures to confirm that the Contractor is maintaining these features. All observed deficiencies shall be corrected by the Contractor within one day.

B. No demolition or earth disturbing activities, material deliveries, or clearing shall be allowed prior to the installation of erosion and control measures to the satisfaction of the Engineer.

C. Contractor shall take sufficient precautions during construction to prevent the runoff of polluting substances such as silt, clay, wastes, fuels, and oils into the surface waters of the State of Connecticut. Storm water catch basins or drains shall be protected from materials runoff. Contractor shall install Silt Sacks within each catch basin in the vicinity of any work areas in accordance with the manufacturer's recommendations, should catch basins be encountered during Work. Contractor shall use all BMPs necessary to protect these inlets from sediment and debris if encountered.

D. Accumulated non-contaminated storm water shall be handled at a location approved by the Engineer.

E. Erosion and sediment control features shall be maintained by the Contractor in the locations shown on the Drawings at all times until completion of the Work or as otherwise approved by the Engineer.

F. Accumulated silt and debris shall be removed and managed by the Contractor from behind the face of the erosion and sedimentation control measures or other BMPs as needed to maintain BMP effectiveness and properly handled and disposed of by the Contractor. Clogged or damaged BMPs shall be replaced immediately.

G. Contractor shall inspect erosion control measures at least weekly and within 24 hours after a rainfall of 0.25 inches or more. The Contractor shall immediately repair any damaged or failed erosion control measures. The Contractor shall document these inspections and maintenance/repair activities in their Daily Activity Reports as outlined in Section 01 33 00 – Submittal Procedures.

H. Care shall be taken not to place removed sediments within the path of existing, newly created, or proposed areas that are or may be subjected to storm water flow.

I. All disturbed areas that are subject to erosion, either newly filled or excavated shall be protected.

J. Additional sediment control measures shall be placed as conditions warrant or as directed by the Engineer or local or State environmental officials.

K. The Contractor shall remove and dispose of the erosion and sedimentation controls after completion of the Work or as directed by the Engineer. Upon removal, any trenches created during the installation of the erosion and control measures shall be backfilled with Loam to match the surrounding ground surface and seeded consistent with Section 31 00 00 – Earthwork and Section 32 90 00 – Landscape Work.

END OF SECTION

SECTION 01 57 16 – TEMPORARY PROJECT CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References and Standards

C. Submittals

D. Dust Control

E. Odor and Vapor Control

F. Vermin Control

G. Noise/Vibration Control

H. Dust, Odor, Vapor, Vermin, and Noise Monitoring

I. Site Perimeter Limits

1.2 RELATED SECTIONS

A. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

B. Section 01 35 43 - Environmental Procedures

C. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

D. Section 01 50 00 - Temporary Facilities and Controls

E. Section 01 50 10 – Temporary Water Control

F. Section 01 57 13 - Temporary Erosion and Sediment Control

G. Section 02 41 00 – Demolition

H. Section 02 81 00 – Waste Management and Disposal

I. Section 02 82 00 - Asbestos Remediation

J. Section 02 84 00 - Hazardous Material Remediation

K. Section 03 30 00 – Reinforced Cast In-Place Concrete

L. Section 04 05 00 – Repair of Stone Masonry Walls

M. Section 05 30 00 – Metal Decking

N. Section 05 52 13 – Pipe and Tube Railing

O. Section 07 10 00 – Weather Proofing

P. Section 31 00 00 – Earthwork

Q. Section 31 37 00 – Stone and Riprap

R. Section 31 52 00 – Temporary Cofferdams

S. Section 32 31 00 – Fencing

T. Section 32 90 00 – Landscape Work

U. Section 40 05 59 – Slide Gate

1.3 REFERENCES AND STANDARDS

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

B. Occupational Safety and Health Administration (OSHA) Regulations – Part 1910.95.

C. OSHA Regulations – Part 1910.1000 Table Z-1.

D. Town of Vernon Noise Ordinance.

E. Contractor's Health and Safety Plan.

1.4 SUBMITTALS

A. Contractor shall include the elements of dust, odor, vapor, noise and vibration controls specified in this Section as part of the Project Work Plan specified under Section 01 33 00 – Submittal Procedures.

1.5 DUST CONTROL

A. Contractor shall conduct all operations in accordance with Section 07 00 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions.

B. Dust control measures shall be employed to mitigate the release of visible airborne particulate matter and/or fugitive dust beyond the Limits of Work generated from general Site work, construction, abatement, and demolition

activities. Fugitive dust at the Limits of Work shall not exceed 0.150 milligrams per cubic meter (mg/m^3). Dust control measures shall also be implemented in accordance with the perimeter Limits of Work action levels and Work zone limits set forth in the Contractor's HASP as outlined in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites.

C. Dust generation during asbestos, PCB, hazardous material, demolition, or construction Work shall not exceed local, State, or federal air quality regulations or specific contaminate limits as outlined in the Contractor's HASP as outlined in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites.

D. Work surface and vehicle control measures shall be employed to prevent caked mud/sediment and debris from being transported off site during transportation activities, vehicle movement, and equipment demobilization. Contractor is responsible for road sweeping and Work stoppage as necessary to maintain facility and public roadways affected by construction activities.

E. In the event that it becomes necessary, in the opinion of Engineer or the Site Safety & Health Officer (SSHO) to provide additional measures to control the release of dust, Contractor shall implement such measures immediately, at no additional cost to the Owner.

F. Contractor is responsible for the implementation of dust control measures required to comply with Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites; Section 02 41 00 - Demolition; Section 02 81 00 – Waste Management and Disposal; Section 02 82 00 - Asbestos Remediation; Section 02 84 00 - Hazardous Materials Remediation; and Section 31 00 00 - Earthwork.

G. Owner reserves the right to suspend Work at any time, if necessary, due to dust generation which causes a safety or an air quality problem or which may cause contamination of adjacent areas. Contractor shall not be entitled to any additional compensation for suspension of Work under such conditions.

H. Visible particulate dust shall not be permitted to leave the Limits of Work.

1.6 ODOR AND VAPOR CONTROL

A. Contractor shall conduct all operations and maintain the Work area so as to minimize and suppress objectionable odors and the potential for organic vapors associated with the Work consistent with all local, State, and federal regulations.

B. Based on the Contractor's Work Zone and Work Zone boundary monitoring and the Engineer's Site perimeter monitoring results, Contractor shall implement measures to suppress organic vapor concentrations and/or odors that may be present. Acceptable measures include covering stockpiles with polyethylene sheeting and backfilling open excavations.

C. Owner and/or Engineer reserve the right to suspend Work at any time in the event the Contractor's operations result in organic vapors or objectionable odors which are deemed to cause a potential safety and/or air quality issue. Contractor shall not be entitled to any additional compensation for suspension of Work under such conditions.

1.7 VERMIN CONTROL

A. The Contractor is responsible for exterminating and/or eliminating vermin and animal harborage within the Limits of Work prior to the start of abatement and demolition activities.

B. The Contractor shall obtain vermin control sign-offs and/or inspections as needed for acquisition of the demolition permit.

C. The Contractor shall set and maintain vermin traps as needed around the perimeter of the Limits of Work throughout abatement and demolition activities to prevent the migration of vermin outside the Limits of Work.

1.8 NOISE/VIBRATION CONTROL

A. Contractor shall conduct all operations so as to minimize noise and vibrations. All Work shall be performed consistent with OSHA 29CFR 1910.95 and applicable Town of Vernon Ordinances.

B. The Contractor is responsible for preventing damage to adjacent structures and utilities resulting from vibrations.

C. Contractor is responsible for limiting vibrations at adjacent structures through the utilization of specific Work practices or vibration controls. The Engineer may monitor vibrations at the Limits of Work, the raceway, and within buildings to remain throughout general site Work, abatement, and demolition activities by establishing vibration monitoring stations. Results of vibration monitoring conducted will be provided to the Contractor upon written request.

D. Engineer will notify the Contractor if vibrations at the action level of 0.5 inch per second (ips) or greater are observed at vibration monitoring locations. Contractor shall modify Work practices or install appropriate vibration controls to limit vibrations. Contractor will be required to stop Work immediately and modify operations if vibrations of 1.0 ips or greater occur at monitoring locations. Vibration-causing Work will not be allowed to resume without approval of modified procedures from the Engineer.

E. Vibration controls may include, but are not limited to the utilization of blast mats or sand aprons around the perimeter of the building to limit the impact of falling demolition debris.

F. Mechanical and/or construction equipment shall not be permitted to operate between the hours of 6 p.m. and 7 a.m. unless pre-approved by the Engineer and Owner.

G. Owner reserves the right to suspend Work at any time due to noise generation causing a safety or excessive vibration hazard. If noise levels exceed a peak level of 85 dBA at the Limits of Work, the Work will be halted and the Contractor shall be responsible for implementing measures to reduce noise levels below these thresholds.

H. To the extent practicable, all equipment utilized at the Site shall be equipped with appropriate noise reduction devices.

I. Contractor is responsible for modifying operations as required in the event of neighborhood noise or vibration complaints.

1.9 DUST, ODOR, VAPOR, VERMIN, AND NOISE MONITORING

A. Contractor shall be responsible for continuous monitoring of active Work zones and Work zone boundaries for dust, odor, vapors, vermin, and noise.

B. Contractor shall perform all required Work Zone and Work Zone boundary monitoring consistent with the Specifications and the Site-Specific Health and Safety Plan (HASP).

C. The Contractor's HASP shall establish Work Zone and Work Zone boundary limits for dust, odors, vapors, and noise designed to be protective of worker health and safety, compliant with applicable federal, State, and local requirements, and satisfy the Limits of Work limits described herein at all times.

1.10 SITE PERIMETER LIMITS

A. The Engineer will perform certain monitoring along the Limits of Work during the performance of the Work. In the event any of the following limits are exceeded, the Engineer will alert the Contractor and the SSHO and the Contractor shall immediately implement appropriate engineered controls such that acceptable levels are achieved and/or stop Work at no additional cost to the Owner.

1. Dust

a. Instantaneous particulate dust levels in excess of 0.150 mg/m^3 at the Limits of Work shall not be allowed.

b. No visible dust at the Limits of Work will be allowed.

2. Odor

a. No objectionable odors resulting from the Work shall be allowed at the Limits of Work.

3. Organic Vapor

   a. Organic vapors, as measured using a photoionization detector, in excess of 1 part per million above background levels at the Limits of Work will not be allowed.

4. Vermin

   a. Vermin shall not be allowed to migrate outside the Limits of Work.

5. Noise

   a. Noise levels that are above 85 dBA at the Limits of Work shall not be allowed.

B. The Engineer may perform vibration monitoring along the Limits of Work, the raceway, and within buildings to remain during the performance of the Work. In the event any of the following limits are exceeded, the Engineer will alert the Contractor and the SSHO and the Contractor shall immediately implement appropriate engineered controls such that acceptable levels are achieved and/or stop Work at no additional cost to the Owner.

1. Threshold and Limiting Values as measured by a seismograph are outlined in the following table.

Threshold Value	Limiting Value
Peak Particle Velocity:	Peak Particle Velocity:
0.5 inches per second less than 30 hertz	1.0 inches per second less than 30 hertz
0.5 inches per second greater than 60 hertz	1.0 inches per second greater than 60 hertz

2. If a Threshold Value is exceeded, the Contractor shall be immediately notified and shall be responsible for implementing appropriate response actions.

3. If a Limiting Value is exceeded, the Contractor shall be immediately notified and shall immediately stop Work in the area. Contractor shall be responsible for modifying his procedures to as not to exceed Limiting Values

C. Contractor shall perform adequate control of dust, odor, vapor, and noise/vibration during his/her Work at all times to achieve these perimeter limits.

D. Contractor's Work zone and Work zone perimeter monitoring program shall be designed to meet these Site perimeter limits.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Dust Meter

B. Organic Vapor Meter

C. Noise Dosimeter

D. Plastic Sheeting

2.2 DUST METER

A. Dust meter shall consist of a real time aerosol monitor with data logging capabilities and a range of 0.001 to 400 mg/m^3.

B. Dust meter shall be a Model pDR-1000AN personal DataRam manufactured by Thermo Scientific or Engineer-approved equivalent.

2.3 ORGANIC VAPOR METER

A. Organic Vapor Meter shall consist of a hand held photoionization detector (PID) equipped with a 10.6 eV lamp and a range of 0 to 15,000 parts per million.

B. Organic Vapor Meter shall be a MiniRae 3000 PID manufactured by RAE Systems or Engineer-approved equivalent.

2.4 NOISE DOSIMETER

A. Noise Dosimeter shall have a range of 70 to 140 decibels with data logging capabilities.

B. Noise Dosimeter shall be a Model eg4 dosimeter manufactured by Quest Technologies or Engineer-approved equivalent.

2.5 PLASTIC SHEETING

A. Sheeting shall be strong, durable, impermeable, flexible 6 mil minimum thickness polyethylene sheeting or other Owner/Engineer-approved material meeting the established criteria in ASTM D4397.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Dust Monitoring and Control

B. Odor and Organic Vapor Monitoring and Control

C. Vermin Monitoring

D. Noise/Vibration Monitoring and Control

E. Plastic Sheeting

3.2 DUST MONITORING AND CONTROL

A. Real time total dust monitoring shall be conducted by the Contractor within Work areas and at the perimeter of Work areas as outlined in the HASP and as may be required by OSHA regulations during certain work activities utilizing a particulate meter capable of monitoring instantaneous particulate levels in air as well as time weighted average.

B. Airborne monitoring for asbestos, lead, PCBs, and other hazardous material removal Work shall be conducted by Contractor within the Work zone as outlined in Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites, the site-specific Health and Safety Plan, and as may be required by OSHA regulations during certain work activities. At a minimum, monitoring shall be completed to establish baseline airborne concentrations at the start of each unique task and/or Work procedure for the contaminants of concern. The Engineer may conduct airborne monitoring for dust, asbestos, lead, PCBs, and other hazardous material removal Work at the Limits of Work or at the Site perimeter.

C. The Contractor shall utilize fine water sprays to control dust on material stockpiles or use other means appropriate in freezing conditions.

D. The Contractor shall utilize mechanical sweepers on paved surfaces where necessary to prevent dust/soil build-up.

E. In the event that it becomes necessary in the opinion of Engineer or SSHO to provide additional measures to control the release of dust, Contractor shall implement such measures immediately at no additional cost to the Owner.

F. Owner reserves the right to suspend work at any time, if necessary, due to dust generation which causes a safety concern or which may cause contamination of adjacent areas. Contractor shall not be entitled to any additional compensation for suspension of work under such conditions.

G. Each working day, furnish to Engineer a daily report presenting the results of the previous day's dust monitoring.

H. This dust monitoring is not intended to be a substitute for any worker exposure monitoring which Contractor may deem necessary for the protection of his work force.

3.3 ODOR AND ORGANIC VAPOR MONITORING AND CONTROL

A. Contractor shall collect background organic vapor level data prior to beginning Work using an Organic Vapor Meter (OVM) equipped with a 10.6 eV lamp. The OVM shall be calibrated in accordance with the manufacturer's recommendations by the Contractor. The background readings shall be collected at locations approved by the Engineer.

B. Real-time total organic vapor monitoring shall be performed by the Contractor daily within the Work Zone in accordance with the HASP and as requested by Engineer.

C. This monitoring is not intended to be a substitute for any additional worker exposure monitoring which Contractor may deem necessary for the protection of the work force.

D. The Engineer will conduct Site perimeter monitoring as described herein.

E. When odors are noted at the perimeter of the Limits of Work or when directed by the Engineer, Contractor shall halt Work and implement odor and organic vapor control measures. Acceptable control measures shall include, but are not limited to, covering stockpiles or open excavations with polyethylene sheeting and/or backfilling open excavations.

F. Contractor shall implement odor control procedures to suppress organic vapor concentrations or objectionable odors in the work area or at the Engineer's request. In the event that it becomes necessary, in the opinion of Engineer or SSHO, to provide additional measures to suppress organic vapor concentrations, Contractor shall implement such measures (i.e., engineering controls, backfilling open areas, etc.) immediately, at no additional cost to Owner.

G. Contractor shall conduct all operations and maintain the Work Zones per Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites so as to minimize and suppress organic vapors and objectionable odors associated with the Work activities through the use of physical barriers.

H. Each working day, furnish the Engineer a daily report presenting the results of the previous day's organic vapor monitoring results.

I. Owner and/or Engineer reserve the right to suspend work at any time, if necessary, due to organic vapors or objectionable odors which cause a safety or air quality problem. Contractor shall not be entitled to any additional compensation for suspension of work under such conditions.

3.4 VERMIN MONITORING

A. Engineer may conduct vermin monitoring during abatement and demolition activities to confirm that vermin and animals are not harboring within Site

buildings. The Contractor is responsible for preventing nuisance conditions resulting from vermin and animal harborage within the Limits of Work.

3.5 NOISE/VIBRATION MONITORING AND CONTROL

A. The Contractor is responsible for preventing damage to adjacent structures and utilities resulting from vibrations. In the event that damage to adjacent structures and/or utilities resulting from vibration due to Contractor activities, the Contractor shall promptly repair structures to conditions similar to those existing prior to the start of construction operations at no additional cost to the Owner. All repair work shall be subject to review by the Engineer to determine acceptability of repairs. The Engineer may conduct vibration monitoring as necessary prior to and during operations to confirm that vibrations do not exceed tolerable limits as described in this Section.

B. The Contractor shall monitor and record background noise prior to start of work activities utilizing a noise dosimeter.

C. The Contractor shall monitor and record noise continuously within the immediate vicinity of the work area. Noise monitoring shall be performed during heavy work activities and at the direction of the Engineer. The Engineer reserves the right to monitor simultaneously and as necessary. Noise levels shall not exceed the levels specified in the Contractor's Health and Safety Plan without implementation of a hearing protection program.

D. Each working day, furnish to the Engineer a daily report presenting the results of the previous day's noise monitoring.

E. The Owner reserves the right to suspend Work at any time, if necessary, due to noise generation causing a safety or excessive vibration hazard. If noise levels exceed a peak level of 85 dBA at the Limits of Work, the Work will be halted and the Contractor shall be responsible for implementing measures to reduce noise levels below these thresholds.

F. To the extent practicable, all equipment utilized at the Site shall be equipped with appropriate noise reduction devices.

G. The Contractor is responsible for modifying operations as required in the event of neighborhood noise or vibration complaints.

H. Acceptable noise/vibration control measures include limiting the amount of equipment in operation at any given time and sequencing the work in a manner to avoid the generation of excessive noise and vibration levels.

3.6 PLASTIC SHEETING

A. If during Work, sheeting becomes torn or punctured, Contractor shall immediately repair or replace damaged sheeting or covering at no additional cost to the Owner.

Contractor shall be responsible for inspecting sheeting or covering at least once per day to check if repair is needed.

END OF SECTION

SECTION 01 66 00 – PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Transportation and Handling

C. Storage and Protection

1.2 RELATED SECTIONS

A. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

B. Section 01 35 43 - Environmental Procedures

C. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

D. Section 01 35 53 - Security Procedures

E. Section 01 50 00 - Temporary Facilities and Controls

F. Section 01 50 10 – Temporary Water Controls

G. Section 01 55 26 - Traffic Control

H. Section 01 57 13 - Temporary Erosion and Sediment Control

I. Section 01 57 16 - Temporary Project Controls

J. Section 01 74 13 - Progress Cleaning

K. Section 02 41 00 - Demolition

L. Section 02 82 00 - Asbestos Remediation

M. Section 02 84 00 - Hazardous Material Remediation

N. Section 03 30 00 – Reinforced Cast In-Place Concrete

O. Section 04 05 00 – Repair of Stone Masonry Walls

P. Section 05 30 00 – Metal Decking

Q. Section 05 52 13 – Pipe and Tube Railings

R. Section 07 10 00 – Weather Proofing

S. Section 31 00 00 - Earthwork

T. Section 31 05 13 – Soils and Aggregate for Earthwork

U. Section 31 37 00 – Stone and Riprap

V. Section 31 52 00 – Temporary Cofferdams

W. Section 32 31 13 – Fencing

X. Section 32 90 00 – Landscape Work

Y. Section 40 05 59 – Slide Gate

1.3 TRANSPORTATION AND HANDLING

A. Contractor shall be responsible for delivery to and/or return from the Site of all materials and equipment necessary to perform the Work and shall pay all freight and handling charges for same.

B. All unloading, storing and reloading necessary shall be the responsibility of the Contractor and shall be at the Contractor's expense.

1.4 STORAGE AND PROTECTION

A. All materials delivered to and used on the Site shall be suitably housed and protected. The areas to be used for storage shall be within the Limits of Work as shown on the Drawings and must be approved by Owner and/or Engineer.

B. No materials or equipment shall be stored so as to interfere with the use, by the public or Owner, of adjacent sidewalks and roads (both on and off site), unless special permission is obtained from the Town of Vernon or other local authorities having jurisdiction and is approved by the Owner and/or Engineer.

C. Coordination with Site personnel and installation of any traffic control devices shall be conducted by the Contractor in accordance with the requirements of Section 01 55 26 - Traffic Control.

D. All construction materials shall be delivered in original, undamaged, sealed containers which are to be unbroken and with labels plainly indicating manufacturer's name, brand, type, and grade.

E. Owner assumes no responsibility for damage, deterioration, or theft of stored materials, equipment, tools, and supplies. Contractor shall assume full responsibility for the storage and protection of all materials brought to the Site. Materials which become damaged, contaminated, deteriorated, destroyed, or stolen shall be repaired or replaced, at the discretion of Owner and/or Engineer, at

no cost to Owner. Containers which are broken, opened, watermarked, or otherwise damaged and/or which contain unsuitable or damaged materials are unacceptable and shall be removed immediately from the Site.

F. Site storage shall be conducted by the Contractor in accordance with the following:

1. Interior Storage:

a. Interior storage areas shall be constructed by the Contractor, as needed, within the Limits of Work.

b. Materials and equipment shall be stored in accordance with manufacturer's instructions, with seals and labels intact and legible.

c. Materials and equipment subject to damage by elements shall be stored in weathertight enclosures.

d. Temperature and humidity within ranges required by manufacturer's instructions shall be maintained.

2. Exterior Storage:

a. Fabricated materials and equipment shall be stored above ground, on blocking or skids. Materials and equipment which are subject to deterioration shall be covered with impervious sheet coverings and provided with adequate ventilation to preclude the formation of condensation on such materials/equipment.

b. Loose granular materials shall be stored in accordance with Section 01 35 43 - Environmental Procedures.

c. Materials such as pipes shall be stored on pallets or racks, off the ground.

d. Contractor shall limit the storage of construction materials within the raceway to the materials required to perform the day’s activities.

3. Storage shall be arranged in a manner to provide easy access for inspection and inventory. Periodic inspections of stored materials and equipment shall be made to ensure that materials and equipment are maintained under specified conditions and free from damage or deterioration.

G. All bentonite, cement, lime, sealants, aggregates, and similar items shall be stored above ground and protected from dampness, weather and other damage.

H. Sheds for flammable liquids shall be so placed or located to avoid damage and danger to Owner’s property, adjacent properties, and the public and must be maintained in a way as to avoid inadvertent spills or discharges to the environment.

I. The storage of liquids will not be permitted within the raceway.

J. Contractor shall maintain on site, Safety Data Sheets (SDS) for all OSHA classified hazardous materials stored or used on-Site.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01 70 00 – EXECUTION AND PROJECT CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Substantial Completion

D. Final Inspection

E. Re-Inspection Fees

F. Contractor's Closeout Submittals to Owner

G. Guarantees and Warranty

H. Final Adjustments of Accounts

I. Final Application for Payment

1.2 REFERENCES

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

1.3 SUBSTANTIAL COMPLETION

A. When Contractor considers the Work is substantially complete, Contractor shall submit to Owner, in writing:

1. A notice that the Work is substantially complete, including project As-Built Record Drawings.

2. A list of items to be completed or corrected.

3. A request that Owner issue a certificate of Substantial Completion.

B. Within 5 days after receipt of such notice, Owner and Engineer will review the Work to determine the status of completion.

C. Should Owner determine that the Work is not substantially complete:

1. Owner will notify Contractor promptly in writing, giving the reasons therefore.

2. Contractor shall remedy the deficiencies in the Work and send a second written notice of Substantial Completion to Owner and Engineer.

3. Owner and Engineer will review the Work to determine status of completion.

D. When Owner concurs that the Work is substantially complete, Owner will:

1. Prepare and deliver to Contractor a Certificate of Substantial Completion, accompanied by list of items to be completed or corrected by Contractor as a precedent to final payment.

1.4 FINAL INSPECTION

A. When Contractor considers the Work is complete, Contractor shall submit written certification to the Owner that:

1. Contract Documents have been reviewed.

2. Work has been inspected for compliance with the Contract Documents.

3. Work has been completed in accordance with Contract Documents.

4. Work is completed and ready for final inspection by Owner and Engineer.

B. Owner and Engineer will review the Work to verify the status of completion with reasonable promptness after receipt of such certification.

C. Should Owner consider that the Work is incomplete or defective:

1. Owner will notify Contractor promptly in writing, listing the incomplete or defective Work.

2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Owner and Engineer that the Work is complete.

3. Owner and Engineer will review the Work.

D. When Owner finds that the Work is acceptable under the Contract Documents, he shall request Contractor to make closeout submittals.

1.5 RE-INSPECTION FEES

A. Should Owner or Engineer have to view the Work more than once after Contractor notifies Owner that the Work is substantially complete or complete due to failure of the Work to comply with the claims of status of completion made by Contractor, Owner reserves the right to deduct re-inspection fees from the final payment to Contractor.

1.6 CONTRACTOR'S CLOSEOUT SUBMITTALS TO OWNER

A. The Contractor shall provide closeout submittals to Owner within 10 days of receiving the request from Engineer to make closeout submittals unless otherwise agreed to by Owner.

B. The following documentation shall be provided in the Closeout submittals to Owner:

1. Evidence of compliance with requirements of governing authorities.

2. Project Record Documents as specified in Section 01 78 00 – Project Record Documents.

3. Evidence of Payment and Release of Liens in connection with the requirements of the General and Supplemental Conditions.

4. Certificate of Insurance for Products and Completed Operations.

5. Guarantees and Warranties.

6. Bonds.

1.7 GUARANTEES AND WARRANTY

A. Contractor and its subcontractors shall guarantee that all Work under this Agreement shall be free from defects of labor and/or materials for a period of one year from date of final acceptance. This guarantee is to be provided within the limitations of other guarantees or warranties in the Contract Documents. This requirement shall not expand or supersede any guarantees or warranties stated, implied, or offered or specified in these Contract Documents.

B. Should any item supplied by Contractor be found defective, whether in design, workmanship, or materials, and providing the item has been utilized in accordance with generally accepted practice and in accordance with the conditions specified, Contractor shall, at his expense, correct all such defects without delay. If Contractor is obliged to correct such defects, the warranty for the repaired or replaced item shall extend for the same period as noted in the specification.

C. If Contractor is unable or unwilling to repair or replace such defective part or parts within reasonable time after having received written notice from Owner, or if any emergency exists rendering it impossible or impracticable for Owner to notify Contractor to repair or replace the defective item, in all such cases Contractor shall reimburse Owner for the reasonable cost of replacing or repairing such defective items.

D. Final payments are contingent upon Owner receipt of such guarantees and/or warranties from Contractor and subcontractors. Contractor shall require all

subcontractors to make any repair or replacement necessary by reason of any defects in materials or workmanship, or failure to meet the requirement of the specifications, which may develop within one year from date of final payment.

1.8 FINAL ADJUSTMENTS OF ACCOUNTS

A. Contractor shall submit a final statement of accounting to Engineer.

B. Such final statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum

2. Additions and deductions resulting from:

a. Previous change orders

b. Unit prices

c. Deductions for incorrect Work

d. Deductions for re-inspection payments

e. Other adjustments

3. Total Contract Sum, as adjusted.

4. Previous payments

5. Sum remaining due

C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum, which were not previously made by Change Orders.

1.9 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in Section 00 70 00 – Standard Conditions.

B. A Certificate of Final Completion of Work will be issued by Owner to Contractor at the completion of project after receipt of all required maintenance instructions, schedules, As Built Record Drawings, guarantees, bonds, insurance certificates, and Release of Liens. The date of said certificates shall be the beginning date of all guarantees.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01 74 00 - FINAL CLEANING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Description

D. Disposal Requirements

1.2 RELATED SECTIONS

A. Section 01 50 00 - Temporary Facilities and Control

B. Section 01 50 10 – Temporary Water Control

C. Section 01 57 13 – Temporary Erosion and Sediment Control

D. Section 01 78 00 - Project Record Documents

E. Section 02 41 00 – Demolition

F. Section 02 81 00 – Waste Management and Disposal

G. Section 02 82 00 - Asbestos Remediation

H. Section 02 84 00 - Hazardous Material Remediation

I. Section 03 30 00 – Reinforced Cast In-Place Concrete

J. Section 04 05 00 – Repair of Stone Masonry Walls

K. Section 05 30 00 – Metal Decking

L. Section 05 52 13 – Pipe and Tube Railings

M. Section 07 10 00 – Weather Proofing

N. Section 31 00 00 – Earthwork

O. Section 31 52 00 – Temporary Cofferdams

P. Section 32 31 13 – Fencing

Q. Section 32 90 00 – Landscape Work

R. Section 40 05 59 – Slide Gate

1.3 REFERENCES

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

1.4 DESCRIPTION

A. The Contractor shall remove all debris and perform all cleaning required as a result of the performance of the Work. Cleaning work shall be performed throughout the duration of the project so as to result in a neat, safe and organized manner. Final clean-up shall be performed by the Contractor to the satisfaction of the Engineer at the completion of the Work.

1.5 DISPOSAL REQUIREMENTS

A. Contractor shall conduct cleaning and disposal operations to comply with all State, federal and local codes, ordinances, regulations, anti-pollution laws and these Specifications.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Materials

2.2 MATERIALS

A. The Contractor shall use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. The Contractor shall use only those cleaning materials and methods recommended by the manufacturer of the surface material to be cleaned.

C. The Contractor shall use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Site Restoration

B. Final Cleaning

3.2 SITE RESTORATION

A. Contractor shall remove all construction material, excess equipment and other debris remaining on the Site as a result of construction operations and shall restore the Site of the work to a neat and orderly condition.

B. Contractor shall remove all excess material and debris and wastes generated during the Work from the raceway prior to removal of the temporary water controls and the cofferdam to the satisfaction of the Engineer.

3.3 FINAL CLEANING

A. At completion, Contractor shall clean all Work areas related to the Agreement, and remove from the Site all debris and waste material in compliance with these Specifications. Contractor shall then perform a general and final cleanup of the Site.

1. Employ skilled workers for final cleaning;

2. Remove debris and packing material associated with construction activities from the project area; and

3. Prior to final completion, Engineer shall view all Work areas, to verify that the entire Limit of Work is clean. Contractor shall perform additional clean-up as necessary to satisfy the Engineer at no additional cost to the Owner.

END OF SECTION

SECTION 01 78 00- PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Submittals

D. Maintenance of Documents

E. Recording

F. As Built Record Drawings

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures

1.3 REFERENCES

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

1.4 SUBMITTALS

A. Work includes keeping accurate record documents for the Work and all additions, substitutions of material, variations in Work and any other additions or revisions to the Agreement in accordance with Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions.

1. Individual drawings showing the location (including GPS coordinate location) of utility terminations, removals, and abandonments; fence installation; asphalt curb installation; guard rail installation; locations and elevations of the final grade of the backfill within and adjacent to the former building footprints; location and elevation of dam installation within the raceway; and locations of existing features and foundations to remain within the Limits of Work.

2. All record documents required for the Work as described herein.

3. The Contractor shall prepare and submit red-lined copies of the Drawings showing clearly how construction deviated from the design in accordance with Section 01 33 00 – Submittal Procedures.

1.5 MAINTENANCE OF DOCUMENTS

A. Maintain at Site, one copy of:

1. Contract Drawings
2. Specifications
3. Addenda
4. Permits
5. Health and Safety Plan
6. Reviewed Shop Drawings
7. Change Orders
8. Any other modifications to the Contract
9. Engineer’s field orders or written instructions
10. Field Test Reports
11. Disposal Manifests
12. Material Delivery Receipts and Tickets

B. Maintain all documents in clean, dry, legible condition.

C. Do not use record documents for construction purposes.

D. Make all documents available at all times for inspection by Engineer.

1.6 RECORDING

A. Label each document "PROJECT RECORD" in large printed letters.

B. Keep record documents current and do not permanently conceal or cover any installed project components until required information has been recorded.

C. Drawings; legibly mark up to record actual construction:

1. Utility terminations
2. Backfill limits and thicknesses
3. Fence installation
4. Asphalt curb installation

5. Guardrail installation

6. Dam installation

7. Features and foundations to remain within the Limits of Work

8. Field changes of dimension and detail

9. Changes made by Field Order or by Change Order

10. Details not on original contract drawings

11. Equipment

D. Specifications and Addenda; legibly mark up each Section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.

2. Changes made by Change Order or Field Order.

1.7 RECORD DRAWINGS

A. The Contractor shall furnish the Engineer with As-Built Record Drawings (also referred to as As-Built Drawings) of the Work.

B. All surveying shall be performed under the direction of a registered land surveyor licensed to perform such Work in the State of Connecticut. All As Built Record Drawings shall be signed and sealed by the licensed surveyor who directed the survey Work. As Built Record Drawings shall use the coordinate systems shown on the Contract Drawings and be at a scale not smaller than 1 inch = 40 feet. As-Built Record Drawings shall be provided to the Engineer as: 1) Mylar® hard copy; and 2) on compact disk (CD) in AutoCAD Civil 3D (2012) format.

C. Contractor shall submit As Built Drawings to Engineer within 10 business days after the completion of the project.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

DIVISION 02
EXISTING CONDITIONS

SECTION 02 41 00 - DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description of Work

C. Applicable Regulations

D. Submittals

1.2 RELATED SECTIONS

A. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

B. Section 01 35 43 - Environmental Procedures

C. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

D. Section 01 35 53 - Security Procedures

E. Section 01 50 10 – Temporary Water Controls

F. Section 01 55 26 – Traffic Control

G. Section 01 57 13 - Temporary Erosion and Sediment Control

H. Section 01 57 16 - Temporary Project Controls

I. Section 02 81 00 – Waste Management and Disposal

J. Section 02 82 00 - Asbestos Remediation

K. Section 02 84 00 - Hazardous Material Remediation

L. Section 03 30 00 – Reinforced Cast In-Place Concrete

M. Section 07 10 00 – Weather Proofing

N. Section 31 00 00 – Earthwork

O. Section 31 37 00 - Stone and Riprap

P. Section 31 52 00 – Temporary Cofferdams

Q. Section 32 31 00 –Fencing

1.3 DESCRIPTION OF WORK

A. Contractor shall furnish all labor, materials, tools, supervision, transportation, and equipment necessary to perform demolition of Buildings 2, 5, (roof and interior as ACM), 6 (interior only), 7, 8, 13, and 14, AST Building, Boiler Room 2, Skyway 2, fiberglass boiler stack, raceway top/cover, raceway dam, and certain other Site features including, but not limited to, retaining walls, floor slabs, foundation walls, asphalt, landscaping, certain utilities (overhead and underground), ramps, poles, bollards, and fencing within the Limits of Work as specified herein and as shown on the Drawings.

B. The Contractor shall sequence the demolition Work in accordance with the demolition phasing approach provided in the Drawings.

C. Certain pre-characterization sampling and analysis have been performed in an effort to identify potentially hazardous materials and asbestos. The Contractor is responsible for conducting hazardous material and asbestos removal operations in accordance with Section 02 82 00 – Asbestos Remediation and Section 02 84 00 – Hazardous Material Remediation. For information purposes, copies of pre-characterization sampling and analysis are included in Attachment H.

D. Work of this Section includes, but is not limited to the following:

1. Paying for, obtaining, and complying with all permits and notifications from the State of Connecticut and the Town of Vernon, including but not limited to demolition permit and hydrant use permit. Copies of all notifications, permits, and communications with the State of Connecticut and the Town of Vernon shall be provided to the Engineer and Owner. The Engineer will submit permit applications for removal of the existing dam and installation of the replacement dam including temporary water control measures required to complete the Work. Drafts of these permits applications are included in Attachment I. The Contractor is responsible for complying with requirements of these permit applications.

2. Implementation of Site controls including, but not limited to perimeter fencing, temporary barriers, and signage.

3. Protection of abutting properties, structures, and public and private ways including but not limited to temporary shoring, bracing, scaffolding, debris nets, and/or other devices.

4. Traffic and pedestrian control consistent with all state and local requirements.

5. Implementation of environmental controls including installation and maintenance of stormwater and spill control measures, erosion and

sedimentation controls, safety procedures and controls, and dust, odor, vapor, vermin, and noise/vibration controls.

6. Cap all existing floor drains prior to demolition to protect drains from being contaminated by run-off from the demolition.

7. Confirmation of the absence/presence of residual liquids in all process piping prior to demolition. Remove, containerize, and dispose off site all residual liquids that may be present in piping.

8. Demolition of Buildings 2, 5 (roof and interior only as ACM), 6 (interior only), 7, 8, 13, and 14, AST Building, Boiler Room 2, Skyway 2, fiberglass boiler stack, raceway top/cover, raceway dam, and certain other Site features including, but not limited to, retaining walls, floor slabs, foundation walls, asphalt, landscaping, certain utilities (overhead and underground), ramps, poles, bollards, and fencing within the Limits of Work as specified herein and as shown on the Drawings.

9. Fracture floor slabs to remain in Building 14 to the satisfaction of the Engineer to promote water infiltration.

10. Management of building materials containing lead-based paint, PCBs, and petroleum in accordance with applicable laws and regulations.

11. Separation of buildings and structures to be demolished from buildings to remain including weatherproofing and temporary bracing (if needed) in accordance with local requirements and as specified herein and as shown on the Drawings.

12. Sealing of newly exposed building openings and penetrations in buildings to remain resulting from building separations in accordance with Section 07 10 00 – Weather Proofing.

E. Segregation, management, testing, loading and off site disposal, recycling, and/or salvage of residual liquids in process piping, demolition debris, solid waste, PCB impacted demolition debris, petroleum impacted wood flooring, asphalt, and steel to an Owner approved facility:

1. Secure temporary staging area for containerization and/or stockpiling prior to transportation off site.

2. Loading into transport containers or vehicles.

3. Inspection and cleaning of transport vehicles prior to their departure from the Site.

4. Preparation and submittal to Engineer of a daily summary sheet that indicates the date, load number, truck number, time of departure from the

Site, gross weight, tare weight, net load weight, and a copy of signed bill of lading and/or manifest.

F. Segregation, management, and on-Site crushing of brick and concrete for reuse, including, but not limited to, coated and uncoated brick, concrete, and masonry materials removed as part of the Work, crushed to 3-inch minus with reinforcing steel removed, and reused for backfill and restoration activities on-Site. Contractor shall re-use processed coated and uncoated brick, concrete, and masonry materials and Suitable Site Materials as defined in Section 31 05 13 – Soils and Aggregate for Earthwork as backfill to the maximum extent practical and prior to the import of backfill materials.

G. Identification, termination, capping, and/or removal of utilities associated with the buildings and Site features to be demolished and additional other utilities as required to isolate utilities from the buildings to be demolished and to obtain demolition permit sign-off. These utilities include, but may not be limited to, the following:

1. Water;
2. Sewer;
3. Steam;
4. Natural Gas;
5. Propane;
6. Drain;
7. Electrical;
8. Telephone;
9. Cable; and
10. Others as identified during demolition and confirmed with Engineer

1.4 APPLICABLE REGULATIONS

A. Conform to applicable federal, State of Connecticut, and Town of Vernon codes as applicable for demolition of structures, utility termination or removal, safety of adjacent structures, traffic and pedestrian control, dust control, odor control, vapor control, vermin control, noise/vibration control, soil erosion and sediment control, and waste disposal.

B. Obtain, pay all fees, and maintain all necessary permits and notifications from applicable authorities for the demolition including, but not limited to, Town of

Vernon demolition permit and hydrant use permit. Copies of all notifications, permits, and communications with the State of Connecticut and the Town of Vernon shall be provided to the Engineer and Owner. The Engineer has submitted permit applications for the removal of the existing dam and construction of the replacement dam including temporary water control measures required to complete the Work. Drafts of these permit applications are included in Attachment I. The Contractor is responsible for complying with requirements of these permit applications.

C. Demolition activities shall be completed in a manner that complies with the requirements of the National Fire Protection Association (NFPA) 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations 2009 Edition.

D. The Owner will obtain an Agent Issued Permit from the local Inland Wetlands Commission for the Work in the upland portions of the Site. This permit will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within this permit.

E. Notify affected utility companies before starting Work and comply with their requirements, including obtaining, paying for, and maintaining all applicable permits. Copies of all permits and communications with the utility companies shall be provided to the Engineer and Owner.

F. Do not close or obstruct roadway, pedestrian, or Site access without prior approval by Owner, Engineer, and the Town of Vernon.

G. Conform to Connecticut Regulation Section 22a-449(c), Hazardous Waste Management and other applicable regulatory procedures when removing, handling, disposing, or otherwise managing hazardous or contaminated materials.

1.5 SUBMITTALS

A. Prepare and submit to Engineer within 10 days of Notice to Proceed, a comprehensive project specific demolition section for inclusion in the Project Work Plan. The demolition section of the Project Work Plan shall be reviewed and approved by the Engineer prior to the start of demolition activities. The demolition section of the Project Work Plan shall be coordinated with and, as appropriate, include reference to the various Drawings, Work Plans, and submittals required by and included in these Specifications.

At a minimum, the Contractor's Demolition Work Plan shall specifically include and address the following:

1. Indicate proposed variances from the Specifications and Drawings.

2. A Critical Path Schedule that details the sequence of asbestos and hazardous material removal, utility cut and caps, and demolition for Work

within the buildings and other structures being demolished under this Contract.

3. Methods, equipment, procedures, and operations. Include information such as catchment system protection details and procedures; equipment types and placement; building access; removal of residual liquids from process piping; removal of petroleum impacted wood flooring and decking and PCB impacted demolition debris; on-Site handling of debris from demolition to staging and loading; segregation of demolition debris waste streams; on-Site crushing of brick and concrete for reuse; and protection controls including protection to traffic, raceway, passerby, streets, and abutting areas and structures.

4. Building Separation Plan including methods, equipment, procedures, sequencing of building separations, shoring, bracing, and protection or building modifications for building separations stamped and signed by a Professional Engineer registered in the State of Connecticut.

5. Raceway Top/Cover Removal Plan including methods, equipment, procedures, sequencing of removal, shoring, bracing, protection of raceway walls and Brooklyn Street Bridge, and separation of top/cover connection from walls for removal of the raceway top/cover stamped and signed by a Professional Engineer registered in the State of Connecticut.

6. Description of installation of temporary utility services.

7. Description of clearance, shut-off, disconnection, and removal/abandonment of utility services.

8. Description of means for protecting adjacent structures.

9. Identification of competent person to supervise demolition, erection, and dismantling of scaffolding and other protective structures on-Site.

10. Requirements and procedures for assuring trained and experienced workers.

11. Inspection and tagging program.

12. Limitations of Work during adverse weather conditions.

13. A site plan indicating Contractor’s intended plan and identifying location for various aspects such as temporary work platforms, temporary access roads, temporary demolition staging and stockpiling areas, truck decontamination (if needed), debris storage areas, dumpster locations, truck loading areas, equipment and material storage, and similar information.

B. Demolition section of Project Work Plan shall include shop drawings, stamped and signed by a Professional Engineer registered in the State of Connecticut. At a minimum, shop drawings shall be submitted for the following and shall address the aspects identified.

1. Temporary structural supports as required during demolition activities, including but limited to, scaffolding, bracing, bulk heads for buildings, and other protective structures. Particular attention shall be given to building separations and personnel and debris fall hazards.

2. Calculations for floor loading adequacy to support any personnel or equipment that the Contractor will have on any of the building floors or roofs during any phase of demolition.

3. Drawings of engineered fall arrest systems designed by a Professional Engineer.

4. Utilization of completely decked working levels for handling of materials.

5. Identification of prohibited activities; e.g., prohibition of the use of cross bracing as a work surface, climbing device or as handrail, etc.

6. Provisions that only scaffold-grade planking or equivalent be used.

7. Methods of temporary protection for adjacent structures within the Limits of Work, when, and if, applicable. The protection systems must clearly show how adjacent structures and utility service is adequately protected, and that worker and public safety is ensured in providing protection and performing the work of this section.

8. Methods, equipment, and sequence of operations for the demolition of the buildings showing how the public and Owner on-Site workers are protected during such demolition.

9. Methods, equipment and materials being used for any support of excavation for the protection of utilities and adjacent structures.

10. Methods of demolition of the buildings and structures that show how adjacent property is being protected.

C. If the Engineer finds that the submitted demolition section of the Project Work Plan or Critical Path Schedule does not comply with specified requirements, the corrective revisions will be noted on the submittal copy returned to the Contractor.

D. Revisions to the accepted demolition section of the Project Work Plan and Schedule may be made only with the written approval of the Engineer. A change

affecting the contract value of any activity including the contract time may be made only in accordance with applicable provisions of the Contract Documents.

E. Project schedule review and update shall be provided at weekly construction period meetings as specified in Section 01 31 19 – Project Meetings.

F. Submit the following upon completion of the demolition activities.

1. Recorded actual quantities of materials removed on a volume and/or mass basis and provide copies of profile forms, and shipping papers.
2. Recorded actual locations of terminated, sealed, and removed utilities.
3. Photographic documentation of Work.
4. Copies of all waste manifests for hazardous waste shipments, manifests and/or bills of lading for nonhazardous waste shipments, disposal documentation, certificates of destruction, and certificates of recycle for all recycled materials generated during course of Work.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Demolition Equipment

B. Sheeting and Coverings

C. Run-Off Controls

2.2 DEMOLITION EQUIPMENT

A. Hydraulically operated grappler, hoe rams, rotating concrete pulverizer, masonry saws, and/or shear equipment or Engineer approved alternative, including hand tools, shall be used to dismantle the Site structures.

B. Use of explosives, wrecking balls, or other demolition methods likely to generate excessive dust, noise, vibration, and other debris are **not** permitted unless approved in writing by Owner and Engineer.

C. Equipment used in cold cutting of scrap metal shall be approved by Engineer and Owner for use with lead-based paint. No hot cutting equipment shall be used on surfaces containing lead-based paint unless the appropriate precautions are taken to comply with Occupational Health and Safety Administration (OSHA) regulations, specifically 40 CFR 1926.62.

D. A Hot Work Permit shall be required for the use of equipment that generates sparks from welding, cutting or brazing. Hot Work shall be minimized to the extent possible. This procedure includes notification requirements, Hot Work permit, and fire watch procedures necessary for preventing fires associated with the sparks generated from welding, cutting, or brazing in accordance with Town

of Vernon requirements. All costs associated with any required fire watch or monitoring is the responsibility of the Contractor.

2.3 SHEETING AND COVERINGS

A. Waterproof sheeting used to cover stockpiles shall be strong, durable, impermeable, flexible 6 mil minimum thickness polyethylene sheeting or other Engineer approved material. It shall be capable of resisting tears or punctures due to equipment placement.

B. Covering of stockpiled demolition debris capable of becoming airborne or generating dust shall be with a strong, durable, impermeable, tear resistant material.

C. Equipment or structural material that is cut and is placed on laydown area that has liner must be cut and placed such that sharp edges do not tear liner.

D. If during Work, sheeting or covering becomes torn or punctured, Contractor shall immediately repair or replace damaged sheeting or covering at no additional cost to the Owner. Contractor shall be responsible for inspecting sheeting or covering at least once per day to check if repair is needed.

2.4 RUN-OFF CONTROLS

A. Refer to Section 01 57 13 – Temporary Erosion and Sediment Controls.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. General Demolition Requirements

B. Utility Termination/Removal

C. General Waste Handling Procedures

D. Scrap Steel Handling Procedures

3.2 GENERAL DEMOLITION REQUIREMENTS

A. Work shall be conducted in such a manner as to keep it confined within Limits of Work shown on the Drawings.

B. Contractor shall ensure that all pre-demolition activities are performed prior to the initiation of demolition activities. This includes, but is not limited to, protecting abutting properties and structures, public and private roadways, and sidewalks, asbestos and hazardous materials removal, removal of residual liquids from

process piping, temporary outages or removal of overhead wires, terminating and/or removing appropriate utilities, and protecting storm water and floor drains.

C. Cap all existing floor drains within the interior of the buildings. Protect adjacent storm drains from being contaminated by run-off from the demolition area consistent with Section 01 57 13 - Temporary Erosion and Sediment Control.

D. Protect Work areas from storm water run-off. Divert or contain storm water run-off as necessary to prevent accumulation within Work areas.

E. Provide all bracing, shoring, protection, or building modifications as necessary and detailed in the Engineer-approved demolition section of the Project Work Plan.

F. Structures to be demolished shall be removed under the supervision of a competent demolition superintendent in accordance with appropriate regulatory requirements for demolition.

G. Contractor shall take all necessary precautions to preclude any release of hazardous materials or hazardous wastes during demolition. If areas are contaminated during the performance of the Work, Contractor shall clean-up and restore contaminated area to the satisfaction of the Engineer at no additional cost to Owner.

H. All asbestos and hazardous materials removal Work shall be performed by the Contractor as described in Section 02 82 00 - Asbestos Remediation and Section 02 84 00 – Hazardous Material Remediation prior to initiating demolition activities. Handle all asbestos-containing and hazardous materials as outlined in the Contractor's approved asbestos, hazardous materials, and demolition sections of the Project Work Plan.

I. The Contractor shall conduct the Work in a manner giving prime consideration to safety, protection of the public, protection from the weather, control of noise and vibration, control of sediments and dust, orderly access for storage of materials, protection of existing structures, surfaces, property features not part of the Work, and coordination and cooperation with the Owner and other Contractor's at all times.

J. The Contractor shall mitigate lead-based paint hazards through proper management of building materials during demolition using lead-safe work practices. At no point will loose and flaking lead-based paint be allowed to become airborne during on-Site operations of any nature. In the event loose and/or flaking paint becomes airborne in the opinion of the Engineer, the Contractor shall modify his procedures to prevent such occurrences at no additional cost to the Owner.

K. Dust, odor, vapor, vermin, and noise/vibration shall be strictly controlled in all areas requiring demolition. Dust, odor, vapor, vermin, and noise/vibration control and monitoring shall be performed in accordance with Section 01 57 16 - Temporary Project Controls.

L. The Owner or Engineer reserves the right to suspend Work at any time, if necessary, due to dust, odor, vapor, vermin, and/or noise/vibration generation which causes a safety or an air quality problem or which may cause contamination of adjacent areas. Contractor shall not be entitled to any additional compensation for suspension of Work under such conditions.

M. Contractor shall not be permitted to drop demolition material from elevated areas unless material is wetted, dropped within an enclosed chute or similar structure, and vibration at the base of drop is controlled. Elevated materials such as poles, stacks, and signage shall be securely held and lowered slowly all the way to the ground.

N. The Contractor is to arrange for and maintain a reliable source of water for dust suppression and decontamination associated with demolition Work in accordance with Section 01 50 00 – Temporary Facilities and Controls. The Contractor is responsible for all equipment, permits, and costs associated with temporary water source.

O. Protect abutting properties and structures, appurtenances, utilities and miscellaneous items located on the property, abutting properties, and public ways not scheduled for demolition. Cease operations immediately if abutting structures appear to be in danger, and notify Engineer immediately. Structures, fencing, and other improvements, both on- and off-Site, damaged by the Contractor that are intended to remain shall be repaired or replaced to the satisfaction of the Engineer at no additional cost to Owner.

P. The Contractor shall be responsible for clearance of all pipe, conduits, and exposed wiring prior to utility disconnect and removal/abandonment.

Q. Contractor is responsible for coordinating temporary outages, removal, or flagging of overhead wires with local utilities as necessary to complete demolition activities proximate to overhead lines to remain.

R. The Contractor shall be responsible for the termination and/or removal of utilities and associated appurtenances within the Limits of Work associated with buildings and Site features to be demolished and additional other utilities as identified on the Drawings including, but not limited to, water, sewer, steam, drain, natural gas, electrical, telephone, cable, and others as identified during demolition and confirmed by Engineer.

S. Demolish features as described herein and shown on the Drawings as follows:

1. Building demolition activities shall be conducted in accordance with the work sequencing identified on the Drawings.

2. Engineer approved methods, procedures, and equipment shall be used to remove the structural materials and complete building separations.

3. Building demolition includes removal, management, containerization, transportation, disposal, recycle, or on-Site reuse of all building components, materials, and equipment associated with each structure and feature to be demolished.

4. Demolition of Building 2 including separation from Buildings 1 and 3 and weather proofing of newly exposed Buildings 1 and 3 facades/openings. Special consideration should be given to protection of the Building 3 stair tower including structural supports for stair tower located on the floor slab of Building 2. Building 2 slab and foundation walls to remain in place.

5. Demolition/removal of all Building. 5 debris including roof system as asbestos containing. Intact masonry walls and concrete floors and foundations to remain.

6. Complete interior demolition of Building 6 including boiler unit, breaching, piping, and all other equipment and appurtenances. Brick boiler stack to remain and be protected throughout demolition activities.

7. Demolition of Building 7 including separation from Buildings 3 and 6 and weather proofing of newly exposed Buildings 3 and 6 facades/openings. Building 7 slab and foundation walls west of raceway to remain. Building 7 slab and foundation walls (including rebar) east of raceway to be removed 18-inches below adjacent ground surface. Debris in crawl space below slab to be removed. In addition, concrete pipe chase east of raceway and utilities within chase to be cut, capped and removed. Utilities within the chase to be cut and capped inside northern face of concrete platform to remain. Below grade opening at concrete platform to remain shall be sealed with concrete or CMU.

8. Demolition of Building 8 including separation from Buildings 9 and 11 and weather proofing of newly exposed Buildings 9 and 11 facades/openings. Building 8 slab and foundations to remain.

9. Demolition of Building 13. Slab and foundations to remain.

10. Demolition of Building 14 including separation from Building 12 and weather proofing of newly exposed Building 12 facades/openings. PCB impacted CMU from east, west, and north exterior walls to be segregated from uncoated brick and managed in accordance with Section 02 84 00 – Hazardous Material Remediation. Wood flooring and decking located on the second floor to be managed and disposed of as non-PCB petroleum impacted debris. Foundation walls (including rebar) to be removed 18-inches below existing exterior grades. Floor slab to be removed to the

limits identified on the Drawings. Existing pits, trenches and sections of floor slab to remain shall be perforated prior to placement of backfill.

11. Demolition of AST Building including removal of AST's, piping, conduit, and appurtenances. Floor slab, foundation walls, and footings to be removed in their entirety.

12. Demolition of Boiler Room 2 including separation from Building 6 and weather proofing of newly exposed Building 6 façade/openings. Boiler Room 2 slab and foundations to remain. Portions of Boiler Room 2 slab backfilled to achieve final Site grading shall be perforated prior to placement of backfill.

13. Demolition of Skyway 2 including separation from Building 4 and weather proofing of newly exposed façade/openings.

14. Demolition of fiberglass boiler stack including associated structural and cable supports. Weather proofing of roof penetrations on Building. 6.

15. Demolition of raceway top/cover including removal of existing debris and solid waste located within the raceway. Work shall be completed following completion of all building demolition and after installation of temporary water control measures as detailed in Section 01 50 10 – Temporary Water Control and the Drawings. Contractor shall cut connection of raceway top/cover to raceway walls and Brooklyn Street Bridge prior to removal of top cover. At no point during raceway top/cover removal shall top/cover be attached to the raceway walls or Brooklyn Street Bridge. Remove all concrete debris and solid waste from the raceway.

16. Contractor shall repair in kind all damage to existing buildings and features to remain caused by building separation activities at no additional cost to the Owner.

17. Contractor shall repair in kind all damage to raceway walls and Brooklyn Street Bridge caused by raceway top/cover removal at no additional cost to Owner.

18. Demolition of Raceway Dam and associated appurtenances. Work shall be completed following completion of all building demolition and after installation of temporary water control measures as detailed in Section 01 50 10 – Temporary Water Control and the Drawings. Contractor shall cut connection of raceway dam to raceway walls prior to removal. Contractor shall also cap with concrete inlet to raceway diversion pipe prior to re-introduction of flow into the raceway.

19. Remove and dispose/recycle accessible utility and process piping, exposed, in chases, and utility vaults within the Limits of Work. Contractor is responsible for plugging with concrete all accessible utility and process piping a minimum of 18-inches below ground surface, flush

with adjacent building walls to remain, or flush with concrete slabs to remain.

20. Remove and dispose/recycle all overhead wires, poles, and bollards not in use within the Limits of Work.

21. Remove and dispose/recycle all loose miscellaneous debris within the Limits of Work.

22. Remove and dispose/recycle retaining walls, asphalt, landscaping features, ramps, and fencing as shown on the Drawings.

23. Management of building materials containing lead-based paint in accordance with all applicable laws and regulations

T. Demolition debris shall be segregated according to the type of material in the staging area. Any salvageable materials shall be staged separately.

U. Demolition material, trash and debris shall be stockpiled or containerized on-Site until appropriate documentation has been prepared and accepted by the Engineer. Debris shall be kept covered and contents wetted (as necessary) to prevent fires or off site dust migration.

V. Demolition material shall be disposed off site, recycled, or salvaged according to characterization requirements of the Owner- approved receiving facilities.

W. Segregation, management, and on-Site crushing of brick and concrete for reuse, including, but not limited to, coated and uncoated brick, concrete, and masonry materials removed as part of the Work, crushed to 3-inch minus with reinforcing steel removed, and reused for backfill and restoration activities on-Site. Contractor shall re-use processed coated and uncoated brick, concrete, and masonry materials and Suitable Site Materials as defined in Section 31 05 13 – Soils and Aggregate for Earthwork as backfill to the maximum extent practical and prior to the import of backfill materials.

X. Conduct operations with minimum interference to facility and Site access. Maintain Site egress and access at all times.

Y. Access to adjacent properties for the Work is not permitted unless approved by the Engineer and Owner.

Z. Contractor shall not burn or bury materials on-Site.

AA. Any vehicles and/or equipment utilizing gasoline or diesel powered internal-combustion engines that are used anywhere within the buildings shall have their exhaust systems directly vented outside of structure.

BB. Contractor shall provide weather proofing of all newly exposed building surfaces following completion of building separation activities in accordance with Section 07 10 00 – Weather Proofing and the Drawings.

CC. Contractor shall decontaminate all equipment prior to leaving Site in accordance with Section 01 35 43.13 - Environmental Procedures for Hazardous Materials.

3.3 UTILITY TERMINATION/REMOVAL

A. The Contractor shall be responsible for the termination and/or removal/abandonment of utilities and associated appurtenances associated with the buildings and Site features to be demolished and additional other utilities as identified on the Drawings including, but not limited to, water, sewer, steam, electrical, natural gas, propane, drain, cable, and telephone, and others as identified during demolition and confirmed by the Engineer. All utility termination work areas shall be restored by the Contractor at a minimum in-kind and in strict accordance with all applicable Town of Vernon, Owner, utility company, and CTDOT requirements.

B. The Contractor shall be responsible for maintaining and protecting existing exterior storm drain systems to remain throughout demolition activities.

C. The Contractor shall complete termination and capping of utility services in accordance with utility company requirements. Locations, procedures and materials to be utilized in capping shall be coordinated with and approved by the utilities. Contractor is responsible for all costs associated with termination and capping of utility services.

D. The Contractor is not required to remove terminated and capped underground utilities. The Contractor shall remove and dispose off Site all underground utilities encountered by the Contractor during excavation activities to facilitate demolition activities. The Contractor is not required to chase identified underground utilities encountered.

E. Contractor shall cap with concrete or hydraulic cement and remove all active and inactive utilities to a minimum of 18-inches below ground surface, flush with adjacent building walls to remain, or flush with concrete slabs to remain.

3.4 GENERAL WASTE HANDLING PROCEDURE

A. Disposal of all wastes generated as a result of Work shall be performed by the Contractor in accordance with all applicable federal, State, and local regulations and in accordance with waste management and disposal specifications outlined in Section 02 81 00 – Waste Management and Disposal.

3.5 SCRAP STEEL HANDLING PROCEDURES

A. Disposal of all scrap steel generated as a result of Work shall be performed by the Contractor in accordance with all applicable federal, State, and local regulations and in accordance with waste management and disposal specifications outlined in Section 02 81 00 – Waste Management and Disposal.

END OF SECTION

SECTION 02 81 00 - WASTE MANAGEMENT AND DISPOSAL

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description of Work

C. References

D. Submittals

E. Waste Categories

1.2 RELATED SECTIONS

A. Section 00 70 00 – Standard Conditions

B. Section 00 73 00 – Supplemental Conditions

C. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

D. Section 01 35 43 – Environmental Procedures

E. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

F. Section 01 35 53 – Security Procedures

G. Section 01 57 16 – Temporary Project Controls

H. Section 01 55 26 – Traffic Control

I. Section 02 41 00 – Demolition

J. Section 02 82 00 – Asbestos Remediation

K. Section 02 84 00 – Hazardous Material Remediation

L. Section 03 30 00 – Reinforced Cast In-Place Concrete

M. Section 04 05 00 – Repair of Stone Masonry Walls

1.3 DESCRIPTION OF WORK

A. The Contractor shall furnish all labor, materials, tools, equipment, and supervision for containerization, characterization, on-Site management, transportation, and

incidentals necessary to transport and dispose/recycle or reuse on-Site as identified all waste generated as a result of the Work to a facility permitted to accept the waste and approved by the Owner. Waste includes, but is not limited to, residual liquids located in process piping, demolition debris, PCB impacted demolition debris, petroleum impacted wood flooring, brick and concrete for reuse, asbestos waste, hazardous materials, unsuitable Site materials, suitable Site materials, solid waste, debris generated during the Work (i.e., used health and safety equipment, decontamination and storage pad materials, polyethylene sheeting), and decontamination liquids.

B. The Contractor shall arrange and pay for all testing necessary to properly characterize wastes for disposal at the selected, permitted, and Owner-approved facility in accordance with facility requirements. All waste characterization samples shall be analyzed by a State of Connecticut certified laboratory.

C. Contractor shall segregate each of these material types by hazardous or non-hazardous waste classification, as determined by results of samples collected. It is Owner's intention to obtain waste classification of non-hazardous for as much of the waste as practicable, to recycle whenever possible, and to minimize the amount of materials disposed of off the Site.

D. The Contractor will be responsible for preparation of the final waste profiles, Bills of Lading (BOLs), manifests, and other shipping documents. The Engineer will assist the Contractor as necessary in preparation of all required waste profiles, BOLs, manifests, and other shipping documents as required per the Owner-approved facilities. The Contractor shall allow a minimum of 5-days for review, and two days for review of all revisions to initial submittals. The Contractor shall allow for a minimum of two days for approval and signature of all finalized disposal documentation requiring Owner signature.

E. The Contractor shall arrange for off-Site transportation of all materials to the Owner-approved facilities and pay all necessary taxes, surcharges, transportation and tipping fees.

F. Owner or Owner's designee will sign all necessary waste profiles and shipping documents as the Generator.

1.4 REFERENCES

A. Section 00 70 00 – Standard Conditions and Section 00 73 00 – Supplemental Conditions of the Agreement between the Town of Vernon and the Contractor.

B. Occupational Safety and Health Administration (OSHA) Standards and Regulations contained in Title 29, Code of Federal Regulations (CFR), Parts 1910 and 1926, including amendments as stated in Federal Register, March 6, 1989, Final Rule, 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response"

1. United States Environmental Protection Agency Guidance
   a. Federal Resource Conservation and Recovery Act, as amended.
   b. United States Environmental Protection Agency (USEPA) 40 CFR 268
   c. Posted weight limitations on roads and bridges
   d. Applicable United States Environmental Protection Agency (USEPA) Analytical Methods
   e. Code of Federal Regulations – Protection of the Environment, Sub-chapter I – Solid Wastes
   f. 40 CFR 122 National Pollutant Discharge Elimination System Standards
   g. 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
   h. Code of Federal Regulations – Transportation, Sub-chapter B – Hazardous Materials Transportation and Pipeline Safety
   i. 49 CFR 106 Rule-making Procedures
   j. 49 CFR 107 Hazardous Materials Program Procedures
   k. Code of Federal Regulations – Transportation, Sub-chapter C, Hazardous Materials Regulations
   l. 49 CFR 171 General Information, Regulations, and Definitions
   m. 49 CFR 172 Hazardous Materials Tables and Hazardous Materials Communications Regulations
   n. 49 CFR 177 Carriage by Public Highway
   o. 49 CFR 178 Specifications for Packaging
   p. 49 CFR 179 Specifications for Tank Cars
   q. 49 CFR 180 Continuing Qualification and Maintenance of Packaging
   r. Code of Federal Regulations – National Pollutant Discharge Elimination System permit

s. Clean Water Act, Section 301 (a)

t. 40 CFR 122.28 Remediation & Miscellaneous Contaminated Sites General Permit (RGP). See also: http://www.epa.gov/region01/npdes/rgp.html

B. Conform to Connecticut Regulation Section 22a-449(c), Hazardous Waste Management and other applicable regulatory procedures when removing, handling, disposing, or otherwise managing hazardous or contaminated materials.

1.5 SUBMITTALS

A. Prepare and submit to Engineer within 10 days of Notice to Proceed, a project-specific waste management and disposal section for inclusion in the Project Work Plan outlining procedures to be used in management of waste materials generated during the Work. The waste management and disposal section shall address, at a minimum, the Contractor's intended methods for characterizing, handling, preparing, storing, treating, shipping, and disposing of all excess materials and outline the areas of the Site in which waste handling activities will occur. Contractor shall identify and make arrangements with all, permitted and Owner-approved offsite reuse, salvage, recycling, and disposal facilities to be used. The Contractor shall not remove any materials from the Site until the Project Work Plan has been approved by the Engineer. If, following approval of the Project Work Plan, the Contractor desires or identifies a need to use any facility not included in the Project Work Plan, he/she must submit all the information as required by this paragraph, and receive approval for same from the Owner, prior to such use. The waste management and disposal section of the Project Work Plan shall, at a minimum, contain the following:

1. List of proposed disposal facilities for each anticipated waste stream. The Contractor shall identify facilities that are permitted to accept these waste streams with their bids. All material shall be disposed of or recycled at a facility permitted to accept these waste streams.

2. Name, title, and telephone number of contact person for each recycling/disposal facility to be used.

3. Lists matching each facility with the materials it will accept for this project, and specifying whether the facility is a recycling, treatment, storage, or disposal facility.

4. Confirmation from the facility(ies) that they are permitted to and will accept the type and quantities of materials. Provide copies of all applicable permits.

5. Description of Contractor's procedures to manage and track materials and example of Contractor's material tracking log.

6. Estimated volumes of waste expected to be generated including demolition debris streams.

7. Hauling company(s) name(s) and address(es).

8. Name, title, and telephone number of contact person for each hauling company to be used.

9. Provide copy of MCS-90 endorsement for haulers of hazardous waste.

B. If the Engineer finds that the submitted waste management and disposal section of the Project Work Plan does not comply with specified requirements, the corrective revisions will be noted on the submittal copy returned to the Contractor.

C. Revisions to the accepted waste management and disposal section of the Project Work Plan may be made only with the written approval of the Engineer. A change affecting the contract value of any activity including the contract time may be made only in accordance with applicable provisions of the Contract Documents.

D. Contractor shall submit daily disposal truck logs to the Engineer. Log shall include date, waste characterization, transporter, disposal facility identification and location, bill of lading or manifest number, vehicle number, driver, and approximate volume and/or weight of waste.

E. Contractor shall submit certificate of recycle for materials transported for recycle to the Engineer. Certificate shall include date, recycle facility, identification and location, approximate volume and/or weight of material, and description of recycled methods.

F. Submit the following upon completion of activities.

1. Recorded actual quantities of materials removed on a volume and/or mass basis and provide copies of profile forms, and shipping papers.

2. Copies of all waste manifests for hazardous waste shipments, bills of lading for nonhazardous waste shipments, certificates of destruction, and certificates of recycle for all recycled materials generated during course of Work.

1.6 WASTE CATEGORIES

A. The following is a listing of the waste categories anticipated for the Work. Contractor shall segregate and dispose of all materials based on these categories and the results of analytical testing required by the Owner-approved receiving facilities. Contractor shall make every effort to segregate waste streams during execution of the Work.

1. Residual Liquids in Process Piping – non-hazardous/hazardous residual liquid in process piping shall include all liquids within process piping located within the interior of the buildings scheduled for demolition. Residuals liquids are likely to include water, dyes, and oils in process piping.

2. Asbestos Remediation Waste – materials shall include all building materials and debris containing or impacted by asbestos, identified on the Drawings and described in the Specifications, including, but not limited to all items as outlined in Table No. 1 – Confirmed Asbestos Containing Materials included in Attachment A and identified by the Contractor. This category also includes all residual ACMs from pre-cleaning and final cleaning activities, and used PPE and enclosure materials.

3. Hazardous Materials/Universal Waste – materials shall include all items as outlined in Table No. 2 – Hazardous Materials Inventory Included in Attachment A and identified by the Contractor with the exception of the residual liquids in process piping detailed above. This category also includes used PPE and enclosure materials.

4. Demolition Debris/Solid Waste – demolition debris/solid waste materials shall include non-contaminated waste materials, including but not limited to, all non-asbestos impacted building materials removed as part of the Work (wood, insulation, drywall, roofing, etc.), interior furnishings, trash, waste packaging materials, scrap metal, asphalt, non-contaminated debris, and other non-contaminated solid wastes generated by Contractor and Engineer in connection with the Work.

5. PCB Impacted Demolition Debris – PCB impacted demolition debris shall include PCB impacted concrete masonry unit (CMU) east, west, and north walls located in Building 14 removed as part of the Work. The Contractor is responsible for separating and segregating PCB impacted CMU from non-impacted brick located on the same walls. This category also includes used PPE and polyethylene sheeting materials generated during the Work.

6. Petroleum Impacted Wood Flooring – material includes petroleum impacted wood flooring and decking located on the second floor of Building 14 removed as part of the Work. The Contractor is responsible for separating petroleum impacted wood flooring from all other wood debris. The material has been tested and does not contain PCBs.

7. Brick and Concrete for Reuse – material includes coated and uncoated brick, concrete, and masonry materials removed as part of the Work, crushed to 3-inch minus with reinforcing steel removed, and reused for backfill and restoration activities on-Site.

8. Unsuitable Site Materials - materials include soil and subsurface debris generated from on-Site sources that are classified by the Engineer as visually and olfactory impacted.

9. Suitable Site Materials – materials include soil and subsurface debris generated from on-Site sources that are classified by the Engineer as suitable for reuse as backfill and restoration activities on-Site.

10. Decontamination Liquids – non-hazardous decontamination liquids generated during the Work.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 SECTION INCLUDES

A. Coordination

B. Materials Handling and Off-Site Transportation

C. General Waste Handling and Disposal Procedures

D. Scrap Steel Handling Procedures

E. Liquid Waste Material and Decontamination Fluids

F. Labeling of Waste Containers

3.2 COORDINATION

A. Contractor shall notify the Engineer prior to sampling for waste characterization for off site disposal. The Engineer will observe all sampling activities performed by the Contractor. Any sampling performed without the knowledge of the Engineer must be repeated by the Contractor to the satisfaction of the Engineer.

B. Contractor shall coordinate the removal, processing (if applicable), and off site transportation of all materials and debris with the Engineer.

3.3 MATERIALS HANDLING AND OFF-SITE TRANSPORTATION

A. Contractor shall perform the following tasks for the proper handling of materials that will be transported to the identified Owner-approved off site disposal facilities:

1. Pack and label materials for transportation following all USEPA, CTDEEP and U.S. and CTDOT regulations.

2. Pending the approval of the Engineer, the Contractor may transport the material from the Site to the approved recycling/disposal facility in appropriate containers or trucks.
3. Manage excess liquids in accordance with regulations and disposal facility requirements governing transportation and disposal.
4. Coordinate and manage the custody of necessary waste profiles, BOLs, hazardous/non-hazardous waste manifests, and labels, as required. Prepare final waste profiles and shipping documents for review by the Engineer and Owner, and signature by the Owner as the Generator. The Contractor shall allow a minimum of 5-days for review, and two days for review of all revisions to initial submittals. The Contractor shall allow for a minimum of two days for approval and signature of all finalized disposal documentation requiring Owner signature.
5. Engage a licensed transporter.

3.4 GENERAL WASTE HANDLING AND DISPOSAL PROCEDURES

A. The Contractor shall arrange and pay for all testing necessary to properly characterize wastes for disposal at the selected Owner approved facility in accordance with facility requirements. Contractor shall segregate each of these material types by hazardous or non-hazardous waste classification, as determined by results of samples collected. It is Owner's intention to obtain waste classification of non-hazardous for as much of the waste as practicable, to recycle whenever possible, and to minimize the amount of materials disposed of off the Site.

B. All characterization sampling of waste for disposal or for potential recycling and reuse shall be performed by the Contractor in accordance with all applicable federal, State, and local regulations and individual waste transporters and disposal facility requirements. Certain pre-characterization of brick and concrete for reuse, PCB impacted CMU, and petroleum impacted wood flooring has been completed by the Engineer and results of analytical testing are included in Attachment H.

C. Waste shall be transported in lined and covered DOT-approved containers to be provided by waste transporter(s) or drums to be provided by Contractor and staged for waste classification sampling. Containers shall meet all U.S. DOT shipping requirements. Shipping containers shall be filled to within legal weight and height limits for shipping. Waste shall be contained to comply with all approved disposal facility requirements. The Contractor shall be responsible for temporarily staging waste in an area designated in the Owner approved on-Site area.

D. Asbestos transport containers shall be lined with a minimum two layers of 6-mil polyethylene sheeting. Asbestos transport containers shall be fully enclosed and lockable.

E. Care should be taken not to overload waste containers. Debris shall be sized, as necessary, and placed in transport containers to achieve appropriate minimum densities.

F. All demolition debris stockpiles comprised of material capable of becoming airborne or generating dust shall be covered with plastic sheeting at all times. Contractor shall be responsible for maintaining plastic sheeting on stockpiles or transport containers.

G. The Contractor shall coordinate, manage, and pay for (as a part of the bid price) all waste handling activities including transportation to the approved receiving facilities.

H. Contractor shall schedule all waste shipments, in coordination with the Engineer, and with the Owner identified as Generator.

I. Any demurrage costs and taxes associated with transportation shall be borne by Contractor at no additional cost to Owner.

J. Contractor shall be responsible for transportation of all waste to Owner -approved disposal facilities unless otherwise noted in these Specifications. Contractor shall provide weight tickets for all waste disposal using commercially available scales with current calibration records. Portable scales will not be permitted for determination of pay quantities. Failure to properly weigh and record wastes transported for disposal will result in non-payment by the Owner.

K. The Contractor shall maintain a daily log of each truck's weight and all waste shipped off the Site.

L. All solid waste material, containment system components, used personal protective equipment and any additional media generated during the work (which will not be decontaminated), shall be placed directly in appropriate waste receptacles immediately upon removal. Suitable waste receptacles may consist of enclosed roll-off containers or DOT-approved 55-gallon drums, and shall be supplied by the Contractor.

M. If roll-off containers are to be utilized for containerization of contaminated Work wastes, the following shall apply:

1. All roll-off containers or similar vessels utilized shall be watertight and lined with 6-mil polyethylene sheeting or equivalent impermeable lining, and equipped with a secured, lockable, and impermeable cover.

2. The impermeable cover shall remain securely in place at all times when material is not being actively placed in the vessels. The Contractor shall be responsible for ensuring that the cover remains securely intact and locked until the container is removed from the Site.

N. If 55-gallon drums are to be utilized for waste containerization, the drums shall consist of suitable DOT-approved 55-gallon drums that are watertight and free of corrosion, perforations, punctures, or other damage. All drums shall be securely covered and sealed at the conclusion of each work day. All drums shall be labeled in accordance with the requirements of this Section and meet the following specifications.

1. Waste disposal drums: Provide DOT 17-H Open – Top Drums (55 gallon) in accordance with DOT regulation title 49 CFR Parts 173, 178, and 179.

2. Fiberboard Drums of Equivalent: Provide sufficient quantity of fiber board drums or equivalent (as determined by Engineer) for packaging of ACMs with rough edges.

O. Disposal bags to be utilized shall be 6 mil (0.15mm) thick leak-tight polyethylene bags.

P. A waste staging area shall be designated by the Contractor prior to initiation of Work, and approved by Engineer.

3.5 SCRAP STEEL HANDLING PROCEDURES

A. Scrap steel shall be transported to a steel processor for smelting and a certificate of destruction/recycling provided.

B. Recycle/salvage of all scrap steel generated as a result of Work shall be in accordance with all applicable federal, State, and local regulations.

C. Contractor shall perform characterization of all scrap steel as necessary for recycle. This may consist of additional lead-based paint analysis if required by the steel management company.

D. Contractor shall be responsible for managing any scrap steel that contain lead-based paint that is in poor condition and is not acceptable for recycle. Any lead-based paint debris and lead-containing waste shall be characterized and properly disposed. All lead-based paint management must be performed in accordance with applicable federal, State, and local regulations.

3.6 LIQUID WASTE MATERIAL AND DECONTAMINATION FLUIDS

A. Under no circumstances shall decontamination fluids or liquid waste be discharged to the ground surface or subsurface at the Site.

B. Liquid materials, including equipment or personal decontamination fluids or similar liquids generated during work at the Site shall be placed directly into appropriately sized and sealed vessels, supplied by the Contractor.

C. Acceptable vessels for the storage of liquid waste may include DOT-approved 55-gallon drums or steel or polyethylene tanks. All proposed vessels shall be compatible with the intended liquid contents.

D. All storage vessels to be used in the containerization and transportation of liquid waste materials shall be free of corrosion, perforations, punctures or other conditions that may impair its ability to securely contain liquid.

E. All liquid storage vessels utilized and staged at the Site shall be stored in an area on the property that will not interfere with normal flow of vehicle or pedestrian traffic, and in a manner that will minimize the potential for tipping, vandalism or damage by vehicular traffic.

F. Disposal of all liquid waste generated at the Site during Work activities shall be a proper waste treatment/disposal facility that is pre-approved by Owner.

3.7 LABELING OF WASTE CONTAINERS

A. All waste containers must be labeled with the name of the waste contained; the date in which the first material was placed in the vessel; and the last date at which addition of waste occurred.

B. All waste containers containing hazardous waste generated during the Work shall be labeled as follows:

1. HAZARDOUS WASTE-Federal law prohibits improper disposal

   If found, contact nearest police or public safety authority or
   The U.S. Environmental Protection Agency.
   Generator's Name:_____
   Manifest Document No:_____

Such marking must be durable, in English and printed on or affixed to the surface of the package or label, tag or sign; displayed on a background of sharply contrasting color; unobscured by labels or attachments and located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

C. Provide leak-tight waste bags or containers for disposal of ACMs with labels in accordance with OSHA, EPA, and the latest revisions to the US Department of Transportation requirements, not limited to material identification number (#NA2212), material packaging group (PGIII), and labels. Warning labels will also include:

Legend: Danger
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

In accordance with NESHAPS, label each waste bag with the name of the waste generator and address where the material was generated. Include the Contractor name and address on each label also. Attach label in a sufficient manner such that they are properly sealed to or on the containers.

D. Label all ACM waste bags, containers, and transport vehicles as required by applicable U.S. Department of Transportation Rules and Regulations.

END OF SECTION

SECTION 02 82 00 – ASBESTOS REMEDIATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description of Work

C. Applicable Regulations

D. Asbestos Removal Submittals

E. References

F. Training and Qualifications

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 35 43 – Environmental Procedures

D. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

E. Section 01 35 53 – Security Procedures

F. Section 01 50 00 - Temporary Facilities and Controls

G. Section 01 55 26 - Traffic Control

H. Section 01 57 13 – Temporary Erosion and Sediment Control

I. Section 01 57 16 – Temporary Project Controls

J. Section 01 74 00 – Final Cleaning

K. Section 02 41 00 – Demolition

L. Section 02 81 00 – Waste Management and Disposal

M. Section 02 84 00 – Hazardous Material Remediation

N. Section 07 10 00 – Weather Proofing

1.3 DESCRIPTION OF WORK

A. Contractor shall furnish all facilities, labor, materials, tools, supervision, transportation, and equipment necessary to perform removal and disposal of asbestos-containing materials (ACMs) as specified herein and as shown on the Drawings. ACMs have been identified in all of the Site buildings.

B. A pre-demolition survey was performed to identify and quantify ACMs. This survey included the collection and analytical testing of samples of readily accessible ACMs and did not include the use of destructive or invasive sampling procedures. Given these limitations, ACMs may be present within portions of the buildings that were not readily accessible. The results of this survey are provided as attachments to these Specifications for informational purposes only. The Contractor is responsible for verifying and determining his/her own quantities and removal/disposal of all ACM as described herein and outlined in Table No. 1 – Confirmed Asbestos-Containing Materials in Attachment A. Laboratory data reports of these analyses are provided in Appendix H.

C. Asbestos removal Work includes, but is not limited to, proper cleaning, removal, collection, containerization, characterization, on-Site management, transportation, and off site disposal of all ACMs as outlined in Table No. 1 – Confirmed Asbestos-Containing Materials included in Attachment A and identified by the Contractor. The Contractor is responsible for identifying and verifying quantity of ACMs requiring removal and disposal. Given the limitations of the pre-demolition survey, described above, the referenced table is not intended to be a comprehensive list of all ACM materials potentially present within the Site buildings.

D. Contractor shall perform all ACM characterization sampling prior to off-Site transportation as necessary for proper disposal at facilities pre-approved by the Owner. All waste characterization samples shall be analyzed by a State of Connecticut certified laboratory.

E. The Contractor shall conduct ACM disposal in accordance with ACM characterization results and these Specifications and all applicable, federal, State, and local regulations.

F. The Contractor shall prepare profiles, manifests, and shipping documents in accordance with Section 02 81 00 – Waste Management and Disposal. The Contractor shall allow a minimum of 5 days for review of all disposal documentation requiring Owner signature.

G. The Contractor shall subcontract the services of a third party project monitor to perform work zone and work zone boundary air monitoring, air clearance testing and visual clearance testing throughout all asbestos removal activities. The Contractor shall perform personal air monitoring and additional air monitoring that may be required for performance of the Work.

1.4 REGULATORY REQUIREMENTS

A. Adhere to work practices and procedures set forth in all applicable codes, regulations, and standards. Conform to applicable federal, State of Connecticut, and Town of Vernon codes and regulations as applicable for ACM removal activities.

B. National Emission Standards for Hazardous Air Pollutants (NESHAPS), Subpart M, National Emission Standard for Asbestos (40 CFR Part 61 §140-147) apply to the owner or operator of a demolition or renovation activity.

C. The United States Environmental Protection Agency (EPA), Title 40, Code of Federal Regulations (CFR), Part 763, Subpart E Asbestos Hazard Emergency Response Act, (40 CFR Part 763).

D. Obtain, pay all fees, and maintain all necessary permits and notifications from applicable authorities for Contractor Work including, but not limited to preparation and submission of a CTDPH Asbestos Start Work Notification 10 working days prior to the commencement of asbestos abatement activities. If required, based on chosen Work practices, the Contractor shall also prepare and submit a CTDPH Application for Alternative Work Practices. Provide copies of all permits, notifications and communications with the State of Connecticut to the Owner.

E. Notify affected utility companies before starting Work and comply with their requirements, including obtaining, paying for, and maintaining all applicable permits. Provide copies of all permits and communications with the utility companies to the Owner.

1.5 ASBESTOS REMOVAL SUBMITTALS

A. Prepare and submit to Engineer within 7 days of Notice to Proceed a CTDPH Asbestos Start Work Notification 10 working days prior to the commencement of asbestos abatement activities. Also, within 7 days of Notice to Proceed, if required, based on chosen Work practices, the Contractor shall also prepare and submit a CTDPH Application for Alternative Work Practices. The Contractor shall also prepare and submit to Engineer within 10 days of Notice to Proceed a project-specific asbestos removal section for inclusion in the Project Work Plan with sufficient detail to identify how the Contractor intends to perform and sequence the Work. If submitted, the Contractor may utilize the CTDPH Application for Alternative Work practices as part of the asbestos removal section of the project Work Plan. The Contractor's asbestos removal section of the Project Work Plan shall, at a minimum, address the following:

1. Methods the Contractor shall use to remove, properly handle, store and dispose of all ACMs.

2. Necessary permits, notifications, and waivers prior to the start of any removal or demolition activities. Copies of all permits, notifications, and waivers shall be provided to the Owner.
3. Required certification/licensure of Contractor and workers.
4. Identify and provide qualifications/licensure of third party project monitor.
5. Coordination of emergency egress and other life safety issues.
6. Sealing of critical barriers to include doorways, windows, heating, ventilation and air conditioning (HVAC) ducts/grills, fixtures, stationary items and other surface openings.
7. Complete isolation of Work areas from non-work areas utilizing polyethylene sheeting sealed with duct tape.
8. Negative pressurization of the Work area with the use of high efficiency particulate air (HEPA) filtration units.
9. Erection of a wet decontamination unit with air lock chambers.
10. SDSs for all chemicals and cleaning supplies to be used on-Site.
11. Detailed description of removal, enclosure, encapsulation, and cleaning techniques to be employed.
12. Worker protection including medical surveillance, HEPA filtered respirators, protective clothing and gloves.
13. Decontamination procedures including wet wiping and HEPA vacuuming of all Work area surfaces, materials, equipment and workers within or exiting the Work area.
14. Procedure for the capture and proper disposal of all wastewater and debris generated by the Work.
15. The Contractor shall, at a minimum, provide the following documents as part of the asbestos removal section of the Project Work Plan prior to initiation of any asbestos removal activities.
    a. Copies of personnel training records for each individual associated with asbestos abatement operations indicating proper training as required by federal and State regulations.
    b. Current state/local licenses and United States Environmental Protection Agency (EPA) certifications for each asbestos worker.
    c. Report of medical examination conducted within last 12 months as part of compliance with Occupational Health and Safety Administration (OSHA) medical surveillance requirements for each worker.
    d. A statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing stress on the worker.

e. Respirator fit test documentation for each worker wearing respiratory protection.

f. Certification by an officer of the Contractor stating that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.1101.

g. Written Respiratory Protection Program as required by OSHA 29 CFR 1910.134 including the selected level of respiratory protection for each task of this project and any supporting historical air monitoring data.

B. Indicate proposed variances from the Specifications and Drawings.

C. Submit Project Record Documents upon completion of asbestos removal Work.

1. Recorded actual quantities of materials removed on a volume and/or mass basis and provide copies of waste characterization data, profile forms, and shipping papers.
2. Copies of Daily Activity Reports and work area logs including personnel on-Site, visitations, inspections, and testing.
3. Copies of analytical results from sampling completed by the Contractor during asbestos removal activities.
4. Photographic documentation of Work.
5. Copies of all waste manifests for hazardous waste shipments, bills of lading for nonhazardous waste shipments, certificates of destruction, and certificates of recycle for all recycled materials generated during course of Work.

1.6 REFERENCES

A. It is the responsibility of the Contractor to perform the Work in accordance with these publications and all other applicable State, federal, and local laws, regulations and statutes.

1. American National Standards Institute (ANSI)
2. ANSI A10.6 (1990) Demolition Operations
3. Code of Federal Regulations (CFR)
4. 40 CFR 61 – Subpart M – National Emissions Standard for Asbestos
5. 40 CFR 260-282 – Solid Wastes
6. 40 CFR 763 – Subpart E – Asbestos Hazard Emergency Response Act
7. OSHA 29 CFR 1910.134 – Respiratory Protection
8. OSHA 29 CFR 1910.1001 – General Industry Standard for Asbestos
9. OSHA 29 CFR 1926.55 – Gases, Vapors, Fumes, Dusts, and Mists
10. OSHA 29 CFR 1926.62 – Lead in Construction
11. OSHA 29 CFR 1926.95 – Criteria for PPE
12. OSHA 29 CFR 1926.1101 – Asbestos Construction Standard

13. U.S. Department of Transportation Regulations 49 CFR Parts 172 and 173
14. CTDPH, Standards for Asbestos Abatement

1.7 TRAINING AND QUALIFICATIONS

A. All workers shall be provided training, at a minimum, on the following topics and in accordance with the requirements of the Site-specific Health and Safety Plan:

1. Asbestos workers shall have valid State of Connecticut asbestos abatement worker license.
2. The health hazards of asbestos including the nature of asbestos related diseases, routes of exposure, known dose-response relationships, the synergistic relationship between asbestos exposure and cigarette smoking, latency periods, and health basis for standards.
3. Personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage of respirators, field testing the face piece to face seal (positive and negative pressure fit tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit, selection and use of disposable clothing, use and handling of washable clothing, non-skid shoes, gloves, eye protection, and hard hats.
4. Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.
5. Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.
6. Work practices for ACM removal including purpose, proper construction and maintenance of airtight plastic barriers, job set-up of airlocks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste cleanup, storage and disposal.
7. Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking, and chewing in the Work area.
8. Special safety hazards that may be encountered including electrical hazards, air contaminants (carbon monoxide, wetting agents, and encapsulants), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress, and noise.
9. Workshops allowing both supervisory personnel and abatement workers the opportunity to observe and experience the construction of containment barriers and decontamination facilities.
10. Lockout/Tagout and Confined Space Entry procedures.

B. Asbestos Abatement Site Supervisor Qualifications

1. The Contractor shall provide at least one State of Connecticut licensed asbestos abatement Site Supervisor, whose responsibilities include coordination, safety, security, and execution of all phases of the asbestos abatement work. The individual and his/her qualifications shall be clearly identified in the Contractor's Asbestos Work Plan. The Site Supervisor shall not be used as an asbestos worker.

2. The asbestos abatement Site Supervisor shall be fully qualified in all aspects of asbestos removal practices and procedures, and have a one-week asbestos training course each for asbestos within the previous year prior to the commencement of asbestos related work. The asbestos training course shall cover all topics listed above as well as training in contract specifications, liability insurance and bonding, legal considerations related to abatement, establishing respiratory protection medical surveillance programs, EPA and OSHA record-keeping programs, as well as any other topics requested by the Owner.

3. The licensed asbestos Site Supervisor shall be certified in CPR and Emergency First Aid by an appropriate authority, as well as having received the required training under the OSHA Bloodborne Pathogen Standard.

4. The Site Supervisor shall be fully qualified and experienced in all aspects of hazardous waste operations to be conducted as part of this work and shall have an additional 8 hours of training in managing Hazardous Waste Operations.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Removal Materials and Equipment

B. Cleaning Materials and Equipment

C. Protective Equipment

D. Disposal Bags

E. Drums

F. Disposal Labels and Signs

G. Run-Off Controls

2.2 REMOVAL MATERIALS AND EQUIPMENT

The Contractor shall provide new materials and new or used equipment in undamaged and serviceable condition. Only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards, are to be used during the Work.

A. Fire Extinguishers

The Contractor shall provide multi-purpose ABC minimum rating to A40BC fire extinguishers. The Contractor shall comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers." Fire extinguishers shall be located where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher inside each Work area in the equipment room and one outside each Work area in the clean room.

B. Construction Lumber

Construction lumber for critical barrier walls shall consist of nominal, 2" x 4" framing, sixteen inches center to center.

C. Plastic Sheeting

The Contractor shall provide non-combustible, fire-retardant, 6-mil thick clear, frosted, or black plastic sheeting in the largest size possible to minimize seams in accordance with local fire department requirements. The use of spray plastic will not be allowed.

D. Adhesive Materials

The Contractor shall provide duct tape in 2" or 3" widths, with an adhesive that is formulated to aggressively stick to plastic sheeting. The Contractor may also provide spray adhesive in aerosol cans that is specifically formulated to stick tenaciously to plastic sheeting.

E. Shower Assembly

Contractor shall provide a leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3' x 3' square with minimum 6' high sides and back. The Contractor shall structurally support the unit as necessary for stability and equip it with a hose bib, mounted at approximately 4'-0" above drain pan.

The Contractor shall provide a factory made shower-head producing a spray of water that can be adjusted for spray size and intensity. The Contractor shall feed shower with water mixed from hot and cold supply lines, arranged so that control of water temperature, flow rate, and shutoff is from inside shower without outside aid.

The Contractor shall provide a totally submersible waterproof sump pump with an integral float switch. The unit shall be sized to pump two times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. The unit shall be capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. The Contractor

shall adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.

F. Negative Air Filtration System

The Contractor shall provide air-filtering equipment capable of filtering particles to 0.3 micrometers at 99.97% efficiency and of sufficient quantity and capacity to cause a complete air change within the work area at least once every 15 minutes. Such equipment shall exhaust the filtered air so as to maintain a negative pressure inside the work area. Air shall flow in through the decontamination unit and exhaust through the negative air filtration unit by means of flexible duct leading outside the work area, preferably outside of the building. Negative air filtration shall be in operation at all times.

G. HEPA Vacuum

The Contractor shall utilize high efficiency filter vacuums to filter particles of 0.3 micrometers or larger at 99.97% efficiency or greater. The Contractor shall obtain HEPA vacuum attachments, such as various size brushes, crevice tools, and angular tools to be used for varied application, and service the HEPA vacuum routinely to assure proper operation. Caution shall be used any time the vacuum is opened for HEPA filter replacement or debris removal. Operators shall wear protective clothing and respirators when using the HEPA vacuum. Vacuuming by conventional means is unacceptable.

H. Encapsulant

The Contractor shall provide a liquid material that can be applied to surfaces stripped of ACM that controls the release of asbestos fibers ("lock down encapsulation") from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding it's components together (penetrating encapsulant).

I. Amended Water

For wetting prior to disturbance of asbestos-containing materials, the Contractor shall use an amended water solution. The Contractor shall provide water to which a commercial surfactant (i.e., not dish detergent) has been added. The Contractor shall use a mixture of surfactant and water, which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material, equal to or greater than that provided by the use of one ounce of a surfactant, consisting

of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

2.3 CLEANING MATERIALS AND EQUIPMENT

A. Cleaning materials and equipment shall be consistent with Section 01 35 43.13 - Environmental Procedures for Hazardous Materials.

B. Cleaning materials must not include any solvent-based products or any products which may contaminate or otherwise cause deterioration of the surfaces. Only water and approved surfactants (if necessary) will be used for cleaning. All cleaning equipment and materials must be pre-approved by Engineer prior to mobilization and use on-Site.

C. Water shall be clean and potable.

D. All decontamination water must be captured, characterized, and properly disposed by the Contractor.

E. To collect dust and small debris, vacuums equipped with high efficiency particulate air (HEPA) filters shall be used as appropriate.

2.4 PROTECTIVE EQUIPMENT

A. Provide health and safety equipment required to protect workers and to comply with the Contractor's Site-specific Health and Safety Plan, OSHA, including 29 CFR 1926.1101, and State of Connecticut regulations.

2.5 DISPOSAL BAGS

A. Disposal bags: Provide 6 mil (0.15mm) thick leak-tight polyethylene bags.

2.6 DRUMS

A. Waste disposal drums: Provide DOT 17-H Open – Top Drums (55 gallon) in accordance with DOT regulation title 49 CFR Parts 173, 178, and 179.

B. Fiberboard Drums of Equivalent: Provide sufficient quantity of fiber board drums or equivalent (as determined by Engineer) for packaging of ACMs with rough edges.

2.7 DISPOSAL LABELS AND SIGNS

A. Provide leak-tight waste bags or containers for disposal of ACMs with labels in accordance with OSHA, EPA, and the latest revisions to the U.S. Department of Transportation requirements, not limited to material identification number

(#NA2212), material packaging group (PGIII), and labels. Warning labels will also include:

Legend: Danger
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

In accordance with NESHAPS, label each waste bag with the name of the waste generator and address where the material was generated. Include the Contractor name and address on each label also. Attach label in a sufficient manner such that they are properly sealed to or on the containers.

B. Label all ACM waste bags, containers, and transport vehicles as required by applicable U.S. and Connecticut Department of Transportation Rules and Regulations.

2.8 RUN-OFF CONTROLS

A. Refer to Section 01 57 13 – Temporary Erosion and Sediment Control.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Asbestos Removal Requirements

B. Asbestos Removal Access Control

C. Asbestos Removal Location Preparation and Removal

D. Housekeeping

E. Quality Control

F. Personal Protection

G. General Waste Handling Procedures

3.2 ASBESTOS REMOVAL REQUIREMENTS

A. Asbestos removal includes proper cleaning, removal, collection, containerization, characterization, on-Site management, transportation, and off-site disposal of all ACMs including associated debris within Work areas and debris generated during pre-cleaning and final cleaning activities.

B. Owner is not liable to Contractor for lost Work time due to federal, State, or local government actions including inspections, data review, Work stoppage, or other unforeseen actions.

C. If the Contractor encounters undiscovered, encased or suspect ACMs during the course of the Work other than those identified in this Section, cease work in affected area only and immediately notify Owner or Engineer of such discovery. Do not proceed with Work in such areas until authorized by the Owner. Continue Work in other areas.

D. The Contractor is responsible for determining the proper removal procedures and proper disposal of ACMs in accordance with current regulatory requirements.

E. The Contractor is responsible for implementing proper engineering controls for protection of public, employees, subcontractors, and building occupants or trades during the Work and to prevent contamination of the buildings outside of the designated work areas.

F. Protect abutting properties and structures, appurtenances, and utilities during ACM removal activities. Cease operations immediately if abutting structures appurtenances, or utilities appear to be in danger, and notify Engineer immediately. Structures, fencing, and other improvements damaged by Contractor that are intended to remain shall be repaired or replaced at no additional cost to the Owner.

G. Conduct operations with minimum interference to Site access. Maintain Site egress and access at all times.

H. Access to adjacent properties for Work is not permitted.

3.3 ASBESTOS REMOVAL ACCESS CONTROL

A. Isolate the Work area to prevent entry by unauthorized personnel or the public. Notify the Engineer of all doors and other openings that must be secured to isolate Work area. Access to stairwells and building exits must be maintained as indicated by the Engineer.

B. Arrange access to Work area so that only access into Work area is through securable doors to personnel and equipment decontamination units.

C. Provide solid construction barriers to prohibit unauthorized access. At a minimum, provide solid barriers as necessary to isolate all work areas with abatement activity. At a minimum provide solid barriers as necessary to isolate all Work areas with removal activity. The Contractor shall report to the Engineer and immediately repair any damage to barriers. Work inside the Work area shall stop until all damaged areas are repaired to the satisfaction of the Owner and Engineer.

D. Make-safe all energized circuits and components in the Work area. The Contractor is responsible for the complete isolation of any energized circuits that are not protected by a ground-fault circuit interrupter (GFCI) in all removal Work areas.

E. Provide warning signs at each door and barrier leading to the Work area as follows:

Legend: Danger
Keep Out
Beyond This Point
Construction Work
In Progress

Immediately inside door (leading to Work area) and outside all accessible critical barriers post a manufactured caution sign, approximately 20-inch by 14-inch, displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend: Danger
Asbestos
Cancer and Lung Disease Hazard
Authorized Personnel Only
Respirators and Protective Clothing Are Required
In This Area

F. The signs shall be posted at the perimeters of asbestos removal, demolition or construction areas where the asbestos-containing material to be removed exists.

G. The Contractor shall maintain all temporary and critical barriers, facilities and controls as long as necessary for the safe and proper completion of the Work. All containments shall consist of floors and walls covered with 2 layers of 6-mil poly sheeting, except in those instances where such surfaces are deemed contaminated, are to be abated, or alternative work practices have been approved.

H. Any breaches in the containment will be corrected at the beginning of each shift and as necessary during the workday by the Contractor. Work will not be allowed to commence until all control systems are in place and operable to the satisfaction of the Engineer and Contractor's third party project monitor.

I. No barriers shall be removed until the work areas are thoroughly cleaned and all debris has been properly bagged and removed from work areas, visual clearance has been provided, and the air has passed final clearance tests, in accordance with provisions detailed herein.

3.4 ASBESTOS REMOVAL LOCATION PREPARATION AND REMOVAL

A. Area Cleaning And Preparation

1. In areas identified as having asbestos debris on surfaces, remedial cleaning shall be required. Cleaning shall be done using HEPA vacuums and wet methods. Pre-removal cleaning shall be required in areas where visible asbestos debris is present on the floors and other surfaces. Respiratory protection and protective clothing shall be required as defined by OSHA

regulation 1926.1101. All pre-cleaning shall be inspected by the Engineer and Contractor's third party project monitor. During pre-cleaning activities, the Work area shall have its primary and critical barriers in place and be under adequate negative pressure as described herein. Any changes to this shall be at the approval of the Engineer and Contractor's third party project monitor. It should be noted that pre-cleaning shall take place in all Work areas prior to commencement of ACM removal. Pre-cleaning shall include wet wiping and HEPA vacuuming of the floor areas and non-movable items. In addition, all cleanable movable items deemed "contaminated" by the Engineer or Contractor's third party project monitor shall also be pre-cleaned.

2. All wall, ceiling and floor surfaces within removal areas not scheduled for removal as part of this project shall be covered with fire retardant polyethylene sheeting. All seams and joints shall be sealed with tape. Wall and ceiling coverings shall consist of a minimum of two layers of 6-mil thickness, fire-rated polyethylene sheeting. Floor coverings shall consist of a minimum of two layers of 6-mil thickness, fire-rated polyethylene sheeting. Surfaces from which ACMs are being removed are exempt from this covering requirement.

3. All critical barriers to the Work area(s) shall be sealed using two layers of 6-mil fire retardant polyethylene sheeting, covering all openings where possible airborne fiber migration can occur. This includes, but is not limited to, windows, doors, vents, HVAC openings, receptacles, holes, floor drains, shafts, and entry points to the Work area(s), etc.

4. The Contractor shall cover all ground, equipment, and building surfaces directly below exterior ACM removal work and out a minimum of 20 feet from the Work during exterior asbestos removal activities with a minimum of two layers of 6-mil thickness, fire-rated polyethylene sheeting. Louvers, grills, open pipes, etc. shall be covered from the exterior.

5. The Contractor shall take all steps necessary to ensure that asbestos fibers do not escape the Work area. The Contractor shall be required to clean all areas of the ground or other man-lift or platform surfaces where contamination is observed. Work will cease until cleaning is completed to the satisfaction of the Engineer and Contractor's third party project monitor and steps have been initiated to prevent further contamination.

6. The Engineer and Contractor's third party project monitor shall conduct an inspection of the Work area(s) preparations and engineering controls prior to the Contractor commencing asbestos abatement activities. Such inspections may include smoke testing potential routes of migration from the Work area(s).

B. Decontamination Unit And Procedures

1. It is the Contractor's responsibility to provide decontamination chambers consisting of a clean room, shower room, and equipment/waste decontamination room (with associated air-locks) for personnel and

waste/equipment involved in asbestos removal. Each of these rooms shall be of sufficient size to accommodate authorized personnel. Shower shall be completely functional as described herein.

2. Each room shall be separated from other rooms by an air-lock. This shall be designed to minimize fiber migration and airflow between the decontamination unit rooms.

3. The rooms shall be framed with 2" X 4" lumber, masked, sealed and attached to the entry/exit ways of asbestos work areas.

4. The rooms together shall be referred to as the decontamination unit. A decontamination unit shall be required for each separate containment area, if the Work is to be divided into sections.

5. The Equipment Room shall serve as a transfer room for decontamination procedures to occur in. This room shall be vacuumed and washed whenever necessary in order to prevent asbestos dust and debris accumulations or when required by the Engineer or Contractor's third party project monitor. Workers leaving the containment shall remove and dispose of disposable protective suits in the equipment room and proceed into the shower room.

6. The shower room shall contain an appropriate number of shower heads supplied with hot and cold water adjustable at the tap. Uncontaminated soap, shampoo, and towels shall be available at all times. The shower water shall be drained, collected, and filtered through a system with at least 5.0-micron particle size collection capability. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filtration system by large particles. Filtered wastewater shall be disposed of as asbestos waste. Contaminated filters shall be disposed of as asbestos waste.

7. The clean room shall store asbestos workers' clean protective clothing and clean respirator equipment. Contaminated clothing, respirators, tools, equipment, or other materials shall not be allowed into the clean room or beyond. The clean room will serve as an access for personnel entering the Work area, and for the donning of respiratory protection and protective clothing. The Contractor shall provide space in the clean room for the workers' personal clothing.

8. The decontamination enclosure system for removing asbestos bags or drums from the Work area(s) shall consist of an air lock from the Work area(s) leading into the bag wash and wipe room, and another air lock leading to outside the Work area(s).

9. The bag wash and wipe room shall be equipped with the facilities to wash and wipe the outside of the drums or bags prior to loading waste into

transport containers or vehicles. Make provisions to prevent any contaminated run-off from leaving the bag wash room.

C. HEPA Filtration

Adequate negative pressure shall be provided within the enclosure as specified below.

1. After asbestos work area is totally isolated, and prior to commencement of Work, the Engineer and Contractor's third party project monitor will perform a visual inspection of the work area. This will consist of checking the integrity of barriers including smoke testing the containment if deemed necessary by the Engineer. This does not in any way relieve the Contractor's responsibilities to ensure the isolation of the work area. The volume of air within the contained work area shall be changed a minimum of four (4) times per hour. A pressure differential reading of -0.02 inches of water shall be maintained in the negative pressure work area relative to adjacent areas. A manometer with a strip chart recorder shall be used to show that the proper pressure differential is being maintained. The manometer shall be placed in a location acceptable to the Engineer. No ACM shall be disturbed until the manometer is installed, is functioning properly and indicates a negative pressure of -0.02 inches of water column or more negative pressure within the Work area relative to adjacent building areas.
2. Equipment used for producing a negative pressure work area shall have a filtering device that is at least 99.97% efficient at a 0.3-micron pore size. Filters meeting these standards are referred to as HEPA filters. The HEPA filtration units shall be equipped with the following:
    a. Magnehelic gauge to monitor the unit's air pressure difference across the filters and be able to interpret magnehelic readings to cubic feet per minute (CPM).
    b. An affixed label, clearly marked and conspicuous, showing the most recent installation date and hour reading of the primary internal HEPA filter.
    c. A clock to record the unit's operation time.
    d. Automatic shut off for filter failure or absence.
    e. Audible alarm for unit shutdown.
    f. Amber flashing warning light for filter loading.
    g. The unit must be equipped with a safety system that prevents it from being operated with the HEPA filter in an improper orientation.
    h. All flexible ducting, vent tubing, adapter plates and other equipment used for the passage of filtered air shall be undamaged, uncontaminated, and free of air leaks at all points.
3. Pre-filters shall be changed frequently during asbestos removal activities.

4. All HEPA units shall exhaust to the outside of the building. All HEPA units shall be tested on-Site by the Contractor.

5. Air movement shall flow uninterrupted from outside the Work area through the decontamination unit into the work area. There shall be no other openings for air to enter the containment unless approved by the Engineer and Contractor's third party project monitor in writing.

6. HEPA filtration units shall be placed as far as possible from the air intake to the containment to prevent short cycling of fresh air.

7. This containment, along with the decontamination unit, shall constitute the critical containment of the Work area from the surrounding areas. All openings to this critical containment are to be sealed except where air must enter the work area due to the use of exhaust equipment.

8. Unless approved by the Engineer and Contractor's third party project monitor, air shall enter the critical containment only through the decontamination unit. A pressure differential meter will be installed and maintained. If pressure differential drops below 0.02 inches of water, stop work until proper negative pressure is restored.

9. Written modifications to these isolation and sealing methods, procedures, and design may be considered if all elements of proper and safe procedures to prevent contamination and exposure can be demonstrated.

10. Written modifications to these requirements must be submitted to the Engineer for review before they can be implemented.

D. Asbestos Removal

1. Asbestos removal shall not begin until the Engineer and Contractor's third party project monitor have given authorization to proceed. This authorization will be given after the removal area has passed a visual inspection by the Engineer and Contractor's third party project monitor based on the criteria presented herein. The Engineer reserves the right to inspect the work area at any time and to order the Contractor to stop Work.

2. During all abatement Work, workers shall wear OSHA-approved and required safety equipment and clothing.

3. The Contractor shall provide equipment as necessary to gain access to all interior and exterior ACMs. The Contractor shall provide all training as appropriate to all workers and supervisors required to operate lifts, ladders, etc. The Contractor shall provide fall protection training and OSHA-approved fall protection for all applicable Work.

4. The Contractor is responsible for the demolition of walls, chases, ceilings, etc. to access all ACMs that may be located within these spaces. The Contractor may be required to sequence asbestos removal and interior demolition phases of Work as needed to access ACMs. Should the Contractor co-mingle non-asbestos building materials with asbestos-

containing or asbestos-contaminated materials, then the Contractor shall dispose of these materials as asbestos waste at no additional cost to the Owner.

5. The Contractor is responsible for the removal/disposal of all non-asbestos coverings or structures required to access ACMs. In areas where non-asbestos materials are applied directly to floor ACMs, the coverings may be disposed of as construction debris if removed prior to the disturbance of other ACM in the work area and if the ACMs are not disturbed by removal of the covering.

6. All asbestos-containing material shall be removed utilizing required containments and negative air filtration. All materials shall be sufficiently saturated/wetted to reduce fiber release so that the airborne fiber concentration does not exceed the established OSHA Permissible Exposure Limits (PELs). All wastewater shall be filtered through 5-micron pore size filters before being discharged or disposed.

7. Dry removal shall not be permitted at any time.

8. All asbestos-containing material shall be carefully removed and placed into double 6-mil polyethylene bag, fiber drums, or individually double wrapped with 6-mil polyethylene sheeting for disposal. All bags, containers or wrapped materials transported out of the work area shall be labeled with preprinted labels required by Federal EPA, OSHA and the Department of Transportation regulations. The name of the waste generator (Owner) and the project location address shall also be placed on each bag/drum.

9. Fine cleaning of residual ACM shall consist of carefully scraping or brushing the material from surfaces. The recommended method for brushing a substrate after gross removal has taken place is to use a nylon brush. Wetting of the substrate shall also occur while this brushing is performed, since the chance of airborne fiber generation during fine cleaning still exists.

10. Air testing shall be performed outside the enclosed asbestos areas by the Contractor's third party project monitor in accordance with State of Connecticut regulations. If fiber concentrations exceed 0.010 fibers per cubic centimeter (fibers/cc), or background levels, Work shall stop and the Contractor shall perform clean-up activities in the affected areas and check the integrity of all barriers. No Work shall commence until air testing verifies that air quality levels are acceptable.

11. Clean-up activities shall include, but not be limited to, wet-wiping and vacuuming surfaces with a HEPA equipped vacuum. Work may continue only after the source of contamination is identified, corrected, and proper cleaning activities are implemented.

12. After brushing and scraping, surfaces shall be free of visible debris and fibers. A final wipe-down of the substrate with wet, lint-free cloths shall take place in order to ensure proper cleaning. All surfaces including floors, walls,

ceilings, and suspended ceiling grid-work shall also be HEPA vacuumed clean.

13. All visible ACM is to be removed by the Contractor before encapsulation procedures are allowed to begin. The third party project monitor will conduct an inspection of the Work area prior to giving approval to begin encapsulation of the Work area. The removal substrate must be clean and bare, and the entire Work area must be free and clear of any suspect material for the Contractor to pass this visual inspection and begin encapsulation.

E. Encapsulation Procedures

1. The polyethylene barriers shall be cleaned of gross contamination before a lockdown sealant can be applied to the substrate.

2. After the substrate has been cleaned and all polyethylene barriers of the Work area are cleaned of all visible debris, the Contractor shall request a visual inspection of the Work area by his/her third party project monitor.

3. Workers performing lockdown must wear disposable protective clothing and respirators suitable for asbestos. The encapsulation process shall not be treated any differently from the removal process in this respect.

4. All surfaces from which ACMs have been removed shall be encapsulated. A minimum of one coat of lockdown encapsulant shall be applied to both the substrate and the polyethylene sheeting serving as the containment barrier. If the lockdown material is being applied to irregular, grooved, or corrugated surfaces, it shall be administered from the opposing side, or at a right angle to the direction of the previous application.

5. The encapsulant shall be left to dry before the commencement of final air testing. After final clearance and inspection criteria have been met, the Contractor shall begin final take-down procedures.

F. Removal Of Critical Barriers

1. No critical barrier shall be taken down until the final visual inspection and final clearance air tests are found to be below 70 structures per square millimeter by Transmission Electron Microscopy (TEM).

2. After a successful final visual inspection by the Contractor's third party project monitor, encapsulation, and a successful final air test, the Contractor shall conduct the post abatement takedown.

3. All encapsulated polyethylene sheeting used in the construction of the decontamination unit and containment area shall be bagged and disposed at an Owner approved disposal facility as asbestos contaminated waste by the Contractor.

4. Areas exposed during this process shall be examined for traces of suspect material.

5. If any suspect asbestos material is found, it shall be picked up by HEPA vacuuming and wet cleaning and a coat of encapsulant shall be applied to the affected areas. Based on the amount of suspect material found, the Engineer or Contractor's third party project monitor may request the use of misters in the surrounding area.

6. The Contractor shall then implement the use of misters as a precautionary measure.

3.5 HOUSEKEEPING

A. Throughout the Work, the Contractor shall maintain the buildings and Site in a standard of cleanliness as described in these Specifications.

1. Contaminated disposable clothing, respirator filters, and other debris shall be bagged and sealed at the end of each workday.

2. All asbestos generated by either removal or repair shall be bagged immediately and not be allowed to be left exposed at the end of each workday.

3. Respirators shall be thoroughly cleaned at the end of each workday and stored for the next days use.

4. The Contractor shall retain all stored items in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection materials.

5. The Contractor shall not allow the accumulation of scrap, debris, waste material, and other items not required for completion of the Work.

6. The Contractor shall provide adequate storage for all items awaiting removal from the Site, observing all requirements for fire protection and protection of the environment.

7. Daily, and more often if necessary, the Contractor shall inspect the Work areas and adjoining spaces, and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

8. The Contractor shall maintain the Site in a neat and orderly condition at all times.

3.6 QUALITY CONTROL

A. The Contractor shall retain the services of a third party project monitor to provide monitoring of asbestos removal work practices and performance, inspection of the Work , bulk fiber identification, personal, perimeter, and clearance air sampling and analysis, and visual clearance inspections throughout the asbestos removal work. The name and qualifications/licensure of the Contractor's third party project monitor shall be included in his/her Asbestos Work Plan. The third party project monitor shall be on-Site at all times during all asbestos removal related activities.

B. Air Monitoring

1. The air clearance acceptance criteria for this project is 70 structures per square millimeter by TEM collected in accordance with CTDPH Standards for Asbestos Abatement. TEM sample analysis shall be available within 24 hours.

2. Background (pre-testing) air and appropriate dust samples may be taken to represent conditions before the Contractor starts masking and sealing operations.

3. During removal, daily area samples shall be collected by the Contractor's third party project monitor outside major openings in the containment, in the clean room, at other critical points outside the Work areas, just outside the clean room, inside the contained Work sites, and at HEPA exhaust locations. The Contractor shall be responsible for all OSHA personal sampling. Final clearance air samples shall be collected by the Contractor's third party project monitor inside each removal area after acceptance of visual inspection and encapsulation.

   NOTE: Encapsulation on all surfaces (including floor) must be dry prior to final air sampling.

4. A sufficient number of samples to reliably characterize the air quality shall be collected. Air shall be agitated by means of a small leaf blower prior to the test, and kept agitated by means of a small electric fan. The results of all samples must comply with the requirements set forth in this Section. Failure to meet the specified criteria will require the Contractor to re-clean the designated work area and then the project monitor to repeat the final air clearance testing at no additional cost to the Owner. All repeat air testing shall be the Contractor's financial responsibility. Cleaning and testing will be repeated until the specified criteria are met.

C. Work Review

1. The Engineer and Contractor's third party project monitor will review the Contractor's work practices prior to the start of, and during all asbestos related work, and will report any violations to the Contractor. If the Contractor fails to correct deficiencies in a timely manner, the Engineer will notify the Contractor and Work may be stopped.

2. The Engineer and third party project monitor will review the containment structure and negative air conditions before Work begins and after the Contractor Site Supervisor has given approval.

3. Outside containment airborne fiber concentrations must not exceed 0.010 fibers/cc or pre-abatement levels, whichever is greater.

4. If concentrations exceed this level, then Work must be stopped, conditions reviewed as to the probable cause, and then corrected by the Contractor at no additional cost to the Owner. The Contractor's third party project monitor

shall keep a daily log of the Contractor's work practices and shall make these daily logs a part of the final project documents.

3.7 PERSONAL PROTECTION

A. Respirators and Protective Clothing

1. Protective Clothing

a. Personal protection, in the form of disposable Tyvek suits, and NIOSH approved respirators, are required for mechanics, Contractor supervision, Owner, Engineer, project monitor, and visitors at the work Site during the set-up, removal, and cleaning operations.

b. The Contractor shall provide all this protective equipment for workers, Owner, Engineer, project monitor, and authorized personnel to access the work areas.

c. Each worker shall be supplied with a minimum of two complete disposable uniforms every day.

d. Removal workers shall not be limited to two uniforms, and the Contractor shall be required to supply additional uniforms as is necessary. Under no circumstances will anyone entering the removal area be allowed to reuse a contaminated uniform.

e. Work clothes shall consist of disposable full body suits, head covers, gloves, footwear, and eye protection. Street clothes are forbidden in the work area at all times even under protective suits.

2. Respiratory Protection

a. The Contractor shall supply workers and supervisory personnel with NIOSH approved protective respirators and HEPA filters.

b. Appropriate respirator selection shall be determined by the daily personal samples being taken and strictly follow the guidelines set forth in the OSHA respiratory program 29 CFR 1910.134. The respirators shall be sanitized and maintained according to the manufacturer's specifications. Appropriate respirators shall be selected using the information provided in OSHA Title 29 CFR Part 1910.1926 Final Rules.

c. The Contractor will maintain on-Site a sufficient supply of disposable HEPA filters to allow workers and supervisory personnel to change contaminated filters at least three times daily. The Contractor is solely responsible for means and methods used and for compliance with applicable regulations.

d. Respirators shall be individually assigned to removal workers for their exclusive use.

e. All respiratory protection shall be provided to workers in accordance with the written submitted respiratory protection program, which includes all items in OSHA 29 CFR 1910.134 (b) (1-11). A copy of this program shall be kept at the on-Site and shall be posted in the Clean Room of the Decontamination Unit.

f. Workers must perform negative and positive pressure fit tests each a time a respirator is put on, whenever the respirator design permits.

g. Workers shall be given a qualitative fit test in accordance with procedures detailed in the OSHA 29 CFR 1910.1025, Appendix D, Qualitative Fit Test Protocols, for all respirators to be used on this project. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.

h. Upon leaving the active work area, the pre-filter shall be discarded, cartridges removed, and respirators cleaned in disinfectant solution and clean water rinse. Clean respirators shall be stored in plastic bags when not in use. The Contractor shall inspect respirators daily for broken, missing, or damaged parts.

3. Personal Sampling

a. The Contractor shall provide daily personal sampling to check personal asbestos exposure levels for the purpose of establishing respiratory protection needs.

b. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less.

c. Personal samples need not be taken every day after the first day if working conditions remain consistent, but must be taken every time there is a change in the removal operation, either in terms of the location or the type of work, or during any changes in personnel. Sampling will be to determine eight-hour Time Weighted Averages (TWA). The Contractor is responsible for personal sampling as outlined in OSHA Standard 1926.1101.

d. Sampling personnel shall be proficient in the taking of asbestos air samples as prescribed by NIOSH 7400, and must be supervised by an individual who has completed the NIOSH 582, or equivalent, training course.

e. Asbestos air sampling results shall be available for posting at the job Site in written form no more than 48 hours after the completion of a sampling cycle. The document shall list each sample's result, sampling time and date, individual monitored, flow rate, sampling duration, microscope field area, number of fibers per fields counted, cassette size, and analyst's name and company. Air sample analysis results will be reported in fibers per cubic centimeter.

3.8 GENERAL WASTE HANDLING PROCEDURES

A. Disposal of all wastes generated as a result of Work shall be performed by the Contractor in accordance with all applicable federal, State, and local regulations and in accordance with waste management and disposal specifications outlined in Section 02 81 00 – Waste Management and Disposal.

END OF SECTION

SECTION 02 84 00 –HAZARDOUS MATERIAL REMEDIATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description of Work

C. Applicable Regulations

D. Hazardous Material Removal Submittals

E. References

F. Training and Qualifications

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures

B. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 35 43 - Environmental Procedures

D. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

E. Section 01 35 53 - Security Procedures

F. Section 01 50 00 - Temporary Facilities and Controls

G. Section 01 55 26 - Traffic Control

H. Section 01 57 13 – Temporary Erosion and Sediment Control

I. Section 01 57 16 - Temporary Project Controls

J. Section 02 41 00 - Demolition

K. Section 02 81 00 - Waste Management and Disposal

L. Section 02 82 00 - Asbestos Remediation

M. Section 07 10 00 – Weather Proofing

1.3 DESCRIPTION OF WORK

A. Contractor shall furnish all facilities, labor, materials, tools, supervision, transportation, and equipment necessary to perform removal and disposal of hazardous materials as specified herein, in the Hazardous Waste Inventory, Table 2 included in Attachment A, and on the Drawings as well as PCB impacted demolition debris as specified herein, and on the Drawings. Analytical laboratory data associated with PCB impacted demolition debris is included in Attachment H.

B. A pre-demolition survey was performed to identify hazardous materials and PCB impacted demolition debris. This survey included visual evaluation and collection and analytical testing of samples of readily accessible materials and did not include the use of destructive or invasive sampling procedures. The results of this survey are provided as attachments to these Specifications for informational purposes only.

C. Hazardous materials may be present within portions of the buildings that were not readily accessible during the pre-demolition survey. The Contractor is responsible for verifying and determining his/her own quantities and removal/disposal of all hazardous materials.

D. Hazardous material removal Work includes, but is not limited to, proper collection, removal, characterization, on-Site management, transportation, and off site disposal/recycling of hazardous materials as outlined in Table No. 2 – Hazardous Materials Inventory included in Attachment A and identified by the Contractor. The Contractor is responsible for identifying and verifying quantity of hazardous materials requiring removal and disposal/recycling. The referenced table is not intended to be a comprehensive list of all hazardous materials present.

E. Hazardous material removal Work includes, but is not limited to, proper collection, removal, characterization, on-Site management, transportation, and off site disposal of all non-hazardous and hazardous residual liquids in process piping located within the interior of the buildings scheduled for demolition. Residuals liquids are likely to include water, dyes, and oils in process piping.

F. PCB demolition debris removal Work includes, but is not limited to, removal, segregation, characterization, on-Site management, transportation, and off site disposal of PCB impacted concrete masonry unit (CMU) east, west, and north walls located in Building 14. The Contractor is responsible for separating and segregating PCB impacted CMU from non-impacted brick located on the same walls and verifying the quantity of PCB impacted CMU requiring removal and disposal. Analytical laboratory data associated with PCB impacted demolition debris is included in Attachment H.

G. Contractor shall perform all hazardous material and PCB demolition debris characterization sampling prior to off site transportation as necessary for proper disposal at facilities pre-approved by the Owner. All waste characterization samples shall be analyzed by a State of Connecticut certified laboratory.

H. The Contractor shall conduct hazardous material disposal in accordance with characterization results and these Specifications and all applicable, federal, State, and local regulations.

I. The Contractor shall prepare profiles, manifests, and shipping documents in accordance with Section 02 81 00 – Waste Management and Disposal.

1.4 REGULATORY REQUIREMENTS

A. Adhere to work practices and procedures set forth in all applicable codes, regulations, and standards. Conform to applicable federal, State of Connecticut, and Town of Vernon codes and regulations as applicable for hazardous material and PCB impacted demolition debris removal activities.

B. Notify affected utility companies before starting Work and comply with their requirements, including obtaining, paying for, and maintaining all applicable permits. Provide copies of all permits and communications with the utility companies to the Engineer and Owner.

C. Conform to Connecticut Regulation Section 22a-449(c), Hazardous Waste Management and other applicable regulatory procedures when removing, handling, disposing, or otherwise managing hazardous or contaminated materials.

1.5 HAZARDOUS MATERIAL REMOVAL SUBMITTALS

A. Prepare and submit to Engineer within 10 days of Notice to Proceed a project-specific hazardous material removal section for inclusion in the Project Work Plan in sufficient detail to identify how the Contractor intends to perform and sequence the work. The Contractor's hazardous material removal section of the Project Work Plan shall at a minimum address the following:

1. Methods the Contractor shall use to remove, separate, segregate, properly handle, store, load, transport, and dispose of all hazardous materials and PCB impacted demolition debris.
2. Necessary permits, notifications, and waivers prior to the start of any removal activities.
3. Required certification/licensure of Contractor and workers.
4. Coordination of emergency egress and other life safety issues.
5. Isolation and/or protection of Work areas from non-Work area spaces utilizing fire retardant polyethylene sheeting sealed with duct tape.
6. Erection of decontamination unit as needed for Work.
7. SDSs for all chemicals and cleaning supplies to be used on-Site.
8. Detailed description of removal and cleaning, techniques to be employed.

9. Worker protection including medical surveillance, respirators, filters, protective clothing and gloves.

10. Decontamination procedures for all Work area surfaces, materials, equipment and workers within or exiting the Work area.

11. Procedure for the capture and proper disposal of all wastewater and debris generated by the Work.

12. The Contractor shall, at a minimum, maintain the following documents on Site as part of the Project Work Plan during removal operations;

    a. Copies of personnel training records for each individual associated with hazardous material removal operations indicating proper training as required by federal and State regulations.

    b. Report of medical examination conducted within last twelve (12) months as part of compliance with Occupational Health and Safety Administration (OSHA) medical surveillance requirements for each worker.

    c. A statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing stress on the worker.

    d. Respirator fit test documentation for each worker wearing respiratory protection.

    e. Certification by an officer of the Contractor stating that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.1101.

    f. Written Respiratory Protection Program as required by OSHA 29 CFR 1910.134 including the selected level of respiratory protection for each task of this project and any supporting historical air monitoring data.

13. Indicate proposed variances from the Specifications and Drawings.

B. Submit Project Record Documents upon completion of hazardous material removal.

1. Record actual quantities of materials removed on a volume and/or mass basis and provide copies of waste characterization data, profile forms, and shipping papers.

2. Copies of daily Site and Work area logs including personnel on-Site, visitations, inspections, and testing.

3. Copies of analytical results completed by the Contractor during hazardous material removal activities.

4. Photographic documentation of Work.

5. Copies of all waste manifests for hazardous or non-hazardous waste shipments, bills of lading for nonhazardous waste shipments, certificates of destruction, and certificates of recycle for all recycled materials generated during course of Work.

1.6 REFERENCES

A. It is the responsibility of the Contractor to perform the Work in accordance with these publications and all other applicable State, federal, and local laws, regulations and statutes.

1. American National Standards Institute (ANSI)
2. ANSI A10.6 (1990) Demolition Operations
3. Code of Federal Regulations (CFR)
4. 40 CFR 260-282 – Solid Wastes
5. OSHA 29 CFR 1910.134 – Respiratory Protection
6. OSHA 29 CFR 1926.55 – Gases, Vapors, Fumes, Dusts, and Mists
7. OSHA 29 CFR 1926.62 – Lead in Construction
8. OSHA 29 CFR 1926.95 – Criteria for PPE
9. U.S. Department of Transportation Regulations 49 CFR Parts 172 and 173
10. CTDEEP Hazardous Waste Management regulations

1.7 TRAINING AND QUALIFICATIONS

A. All workers shall be provided training, at a minimum, on the following topics and in accordance with the requirements of the Site-specific Health and Safety Plan:

1. The health hazards of identified hazardous materials including the nature of related diseases, routes of exposure, known dose-response relationships, and health basis for standards.

2. Personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage of respirators, field testing the face piece to face seal (positive and negative pressure fit tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit, selection and use of disposable clothing, use and handling of washable clothing, non-skid shoes, gloves, eye protection, and hard hats.

3. Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.

4. Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.

5. Workers who handle hazardous materials shall be trained in safe and proper hazardous materials handling procedures. At a minimum, this shall include OSHA 40 Hour Hazardous Waste Site Health and Safety Training in accordance with CFR 1910.120

6. Work practices for hazardous materials removal including purpose, proper construction and maintenance of airtight plastic barriers, job set-up of airlocks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste cleanup, storage and disposal.

7. Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking, and chewing in the Work area.

8. Special safety hazards that may be encountered including electrical hazards, air contaminants (carbon monoxide, wetting agents, and encapsulants), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress, and noise.

9. Workshops allowing both supervisory personnel and abatement workers the opportunity to observe and experience the construction of containment barriers and decontamination facilities.

10. Lockout/Tagout and Confined Space Entry procedures.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Removal Materials and Equipment

B. Cleaning Materials and Equipment

C. Protective Equipment

D. Disposal Bags

E. Drums

F. Disposal Labels and Signs

G. Run-Off Controls

2.2 REMOVAL MATERIALS AND EQUIPMENT

A. The Contractor shall provide new materials and new or used equipment in undamaged and serviceable condition. Only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards, are to be used during the Work.

1. Fire Extinguishers – See Section 02 82 00 – Asbestos Remediation
2. Plastic Sheeting - See Section 02 82 00 – Asbestos Remediation
3. Adhesive Materials - See Section 02 82 00 – Asbestos Remediation
4. Shower Assembly - See Section 02 82 00 – Asbestos Remediation
5. HEPA Vacuum - See Section 02 82 00 – Asbestos Remediation

2.3 CLEANING MATERIALS AND EQUIPMENT

A. See Section 02 82 00 – Asbestos Remediation

2.4 PROTECTIVE EQUIPMENT

A. Provide health and safety equipment required to protect workers and to comply with the Contractor's Site-specific Health and Safety Plan, OSHA, including 29 CFR 1926.1101 and State of Connecticut regulations.

2.5 DISPOSAL BAGS

A. Disposal bags: Provide 6 mil (0.15mm) thick leak-tight polyethylene bags.

2.6 DRUMS

A. Waste disposal drums: Provide DOT 17-H Open – Top Drums (55 gallon) in accordance with DOT regulation title 49 CFR Parts 173, 178, and 179.

2.7 DISPOSAL LABELS AND SIGNS

A. Label all hazardous material waste bags, containers, and transport vehicles as required by applicable U.S. Department of Transportation Rules and Regulations.

2.8 RUN-OFF CONTROLS

A. Refer to Section 01 57 13 – Temporary Erosion and Sediment Control.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Hazardous Material Removal Requirements

B. PCB Impacted Demolition Debris Removal Requirements

C. Housekeeping

D. Personal Protection

E. General Waste Handling Procedures

3.2 HAZARDOUS MATERIAL REMOVAL REQUIREMENTS

A. Hazardous material removal includes proper collection, removal, characterization, on-Site management, transportation, and off site disposal/recycling of all hazardous materials and universal/regulated wastes.

B. The Contractor is responsible for determining the proper removal procedures and proper disposal of hazardous materials in accordance with characterization sampling and current regulatory requirements.

C. Work shall be conducted in such a manner as to keep it confined within Limits of Work.

D. Conduct operations with minimum interference to Site accesses. Maintain Site egress and access at all times.

E. Do not mix potentially hazardous waste streams. Where feasible, separate each type of hazardous waste from other types of hazardous waste. In the event uncontaminated materials become contaminated and/or contaminated materials are mixed, the Contractor shall be solely responsible for any and all incurred costs.

F. Segregate, package, label, transport and dispose of Hazardous Materials in accordance with DOT, United States Environmental Protection Agency (EPA), State, and local requirements.

G. The Contractor shall place hazardous materials in approved transport packaging immediately following removal. Intermediate staging of hazardous materials prior to placement in approved transport containers shall not be permitted.

H. Maintain all containers in a continuously sealed condition after they have been filled. Do not reopen sealed containers or place additional waste in previously sealed containers.

I. Care must be taken not to break identified Hazardous Materials, as that may cause exposure to individuals handling them and may require additional clean-up and decontamination.

J. Contractor shall take all necessary precautions to preclude any release of Hazardous Materials. If areas are contaminated during Work, Contractor shall clean-up and restore contaminated area at no cost to Owner.

K. Owner is not liable to Contractor for lost Work time due to federal, State, or local government actions including inspections, data review, Work stoppage, or other unforeseen actions.

L. The Contractor is responsible for implementing proper engineering controls for protection of public, employees, subcontractors, and building occupants or trades during the Work and to prevent contamination of the buildings outside of the designated Work areas.

M. Protect abutting properties and structures, appurtenances, and utilities during hazardous material removal activities. Cease operations immediately if abutting structures, appurtenances, or utilities appear to be in danger, and notify Engineer immediately. Structures, fencing, and other improvements damaged by Contractor that are intended to remain shall be repaired or replaced at no cost to Owner or Engineer.

N. Make-safe all energized circuits and components in the Work area. The Contractor is responsible for the complete isolation of any energized circuits that are not protected by GFCI in all removal Work areas.

O. The Contractor shall be responsible for controlling access to the Work area(s) and shall maintain a daily log of personnel entering the Work area(s).

P. At all times, access to exits, stairways, etc., for egress shall be free of obstacles including building debris, equipment, etc.

Q. The Contractor shall maintain all temporary barriers, facilities and controls as long as necessary for the safe and proper completion of the Work. No barriers shall be removed until the Work areas are thoroughly cleaned and all debris and/or liquids have been properly bagged and removed from work areas.

R. During all removal Work, workers shall wear OSHA-approved and required safety equipment and clothing.

S. The Contractor shall provide equipment as necessary to gain access to and remove all interior and exterior hazardous materials. The Contractor shall provide all training as appropriate to all workers and supervisors required to operate lifts, ladders, pumps, etc. The Contractor shall provide fall protection training and OSHA approved fall protection for all applicable Work.

T. If hazardous materials, such as chemicals, or other hazardous materials are discovered during the course of the work other than those identified in the Specifications, cease work in affected area only and immediately notify Owner or Engineer of such discovery. Do not proceed with work in such areas until authorized by the Owner. Continue work in other areas.

3.3 PCB IMPACTED DEMOLITION DEBRIS REMOVAL REQUIREMENTS

A. PCB impacted demolition debris removal includes proper removal, separation, segregation, characterization, on-Site management, transportation, and off site disposal of all PCB impacted concrete masonry unit (CMU) east, west, and north walls located in Building 14. The Contractor is responsible for separating and segregating PCB impacted CMU from non-impacted brick located on the same walls.

B. The Contractor is responsible for determining the proper removal, separation, and segregation procedures of PCB impacted demolition debris in accordance with Section 02 41 00 – Demolition and proper disposal in accordance with characterization sampling and current regulatory requirements.

C. Work shall be conducted in such a manner as to keep it confined within Limits of Work.

D. Conduct operations with minimum interference to Site access. Maintain Site egress and access at all times.

E. Access to the active Work area shall be controlled in a manner determined by the Contractor to meet project requirements and access needs. At a minimum, exclusion zones shall be set up and marked by Caution tape and "Warning PCB Work Area" or similar signs around the perimeter of the Work area.

F. All Work surfaces shall be wetted to minimize dust during removal operations in accordance with Section 01 57 16 – Temporary Project Controls.

G. PCB exclusion zones shall be broom swept clean following completion of removal activities.

H. During all removal Work, workers shall wear OSHA-approved and required safety equipment and clothing.

I. All personnel will be required to follow decontamination procedures upon exiting exclusion zones. No drinking, eating, smoking, or cell phone use will be permitted in containment.

J. Do not mix PCB impacted demolition debris waste stream with other waste streams. In the event uncontaminated materials become contaminated and/or contaminated materials are mixed, the Contractor shall be solely responsible for any and all incurred costs.

K. Segregate, package, label, transport and dispose of PCB impacted demolition debris in accordance with DOT, United States Environmental Protection Agency (EPA), State, and local requirements.

L. Wastes shall be transported in DOT-approved containers or DOT-approved trucks to Owner approved disposal facilities.

M. Contractor may "live load" wastes directly from remediation to disposal transportation or temporarily store PCB impacted demolition debris at the Site. If PCB impacted demolition debris is stored on-Site it should be placed on and covered with polyethylene sheeting.

N. Contractor shall take all necessary precautions to preclude the release of any PCB impacted demolition debris. If areas are contaminated during Work, Contractor shall clean-up and restore contaminated area at no cost to Owner.

O. Owner is not liable to Contractor for lost Work time due to federal, State, or local government actions including inspections, data review, Work stoppage, or other unforeseen actions.

P. The Contractor is responsible for implementing proper engineering controls for protection of public, employees, subcontractors, and building occupants or trades during the Work and to prevent contamination of the buildings outside of the designated Work areas.

Q. Protect abutting properties and structures, appurtenances, and utilities during removal activities. Cease operations immediately if abutting structures, appurtenances, or utilities appear to be in danger, and notify Engineer immediately. Structures, fencing, and other improvements damaged by Contractor that are intended to remain shall be repaired or replaced at no cost to Owner or Engineer.

R. The Contractor shall maintain all temporary barriers, facilities and controls as long as necessary for the safe and proper completion of the Work. No barriers shall be removed until the Work areas are thoroughly cleaned and all debris has been properly stockpiled, containerized, or removed from Work areas.

S. The Contractor shall provide equipment as necessary to gain access to, remove, separate, and segregate PCB impacted demolition debris. The Contractor shall provide all training as appropriate to all workers and supervisors required to operate lifts, ladders, pumps, etc. The Contractor shall provide fall protection training and OSHA approved fall protection for all applicable Work.

3.4 HOUSEKEEPING

A. Throughout the Work, the Contractor shall maintain the buildings and Site in a standard of cleanliness as described in these Specifications.

1. Contaminated disposable clothing, respirator filters, and other debris shall be bagged and sealed at the end of each workday.

2. All wastes generated by either removal or repair shall be bagged immediately and not be allowed to be left exposed at the end of each workday.

3. The Contractor shall retain all stored items in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection materials.

4. The Contractor shall not allow the accumulation of scrap, debris, waste material, and other items not required for completion of the Work.

5. The Contractor shall provide adequate storage for all items awaiting removal from the Site, observing all requirements for fire protection and protection of the environment.

6. Daily, and more often if necessary, the Contractor shall inspect the Work areas and adjoining spaces, and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

7. The Contractor shall maintain the Site in a neat and orderly condition at all times.

3.5 PERSONAL PROTECTION

A. Respirators and Protective Clothing

1. Protective Clothing

a. Personal protection, in the form of disposable Tyvek suits, and NIOSH approved respirators, are required for mechanics, Contractor supervision, Owner, Engineer, and visitors at the work Site during the set-up, removal, and cleaning operations.

b. The Contractor shall provide all this protective equipment for workers, Owner, Engineer, and authorized personnel to access the work areas.

c. Each worker shall be supplied with a minimum of two complete disposable uniforms every day.

d. Removal workers shall not be limited to two uniforms, and the Contractor shall be required to supply additional uniforms as is necessary. Under no circumstances will anyone entering the removal area be allowed to reuse a contaminated uniform.

e. Work clothes shall consist of disposable full body suits, head covers, gloves, footwear, and eye protection. Street clothes are forbidden in the work area at all times even under protective suits.

2. Respiratory Protection

a. The Contractor shall supply workers and supervisory personnel with NIOSH approved protective respirators and HEPA filters.

b. Appropriate respirator selection shall be determined by the daily personal samples being taken and strictly follow the guidelines set

forth in the OSHA respiratory program 29 CFR 1910.134. The respirators shall be sanitized and maintained according to the manufacturer's specifications. Appropriate respirators shall be selected using the information provided in OSHA Title 29 CFR Part 1910.1926 Final Rules.

c. The Contractor will maintain on-Site a sufficient supply of disposable HEPA filters to allow workers and supervisory personnel to change contaminated filters at least three times daily. The Contractor is solely responsible for means and methods used and for compliance with applicable regulations.

d. Respirators shall be individually assigned to removal workers for their exclusive use.

e. All respiratory protection shall be provided to workers in accordance with the written submitted respiratory protection program, which includes all items in OSHA 29 CFR 1910.134 (b) (1-11). A copy of this program shall be kept at the on-Site and shall be posted in the Clean Room of the Decontamination Unit.

f. Workers must perform negative and positive pressure fit tests each a time a respirator is put on, whenever the respirator design permits.

g. Workers shall be given a qualitative fit test in accordance with procedures detailed in the OSHA 29 CFR 1910.1025, Appendix D, Qualitative Fit Test Protocols, for all respirators to be used on this project. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.

h. Upon leaving the active work area, the pre-filter shall be discarded, cartridges removed, and respirators cleaned in disinfectant solution and clean water rinse. Clean respirators shall be stored in plastic bags when not in use. The Contractor shall inspect respirators daily for broken, missing, or damaged parts.

3. Personal Sampling

a. The Contractor shall provide daily personal sampling to check personal exposure levels for the purpose of establishing respiratory protection needs as outlined in the Contractor’s Health and Safety Plan.

b. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less.

c. Personal samples need not be taken every day after the first day if working conditions remain consistent, but must be taken every time there is a change in the removal operation, either in terms of the location or the type of work, or during any changes in personnel. Sampling will be to determine eight-hour Time Weighted Averages

(TWA). The Contractor is responsible for personal sampling as outlined in OSHA Standard 1926.1101.

d. Sampling personnel shall be proficient in the taking of air samples as prescribed by NIOSH 7400, and must be supervised by an individual who has completed the NIOSH 582, or equivalent, training course.

e. Air sampling results shall be available for posting at the job Site in written form no more than 48 hours after the completion of a sampling cycle.

3.6 GENERAL WASTE HANDLING PROCEDURES

A. Disposal of all wastes generated as a result of Work shall be performed by the Contractor in accordance with all applicable federal, State, and local regulations and in accordance with waste management and disposal specifications outlined in Section 02 81 00 – Waste Management and Disposal.

END OF SECTION

DIVISION 03
CONCRETE

SECTION 03 30 00 - REINFORCED CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Scope of Work

D. Submittals

E. Quality Assurance

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 35 43 – Environmental Procedures

D. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

E. Section 01 50 10 – Temporary Water Control

F. Section 01 57 13 – Temporary Erosion and Sediment Control

G. Section 01 66 00 – Product Storage and Handling Requirements

H. Section 02 81 00 – Waste Management and Disposal

I. Section 04 05 13 – Repair of Stone Masonry Walls

J. Section 05 30 00 – Metal Decking

K. Section 05 52 13 – Pipe and Tube Railings

L. Section 31 00 00 – Earthwork

M. Section 31 05 13 – Soils and Aggregates for Earthwork

N. Section 31 37 00 – Stone and Riprap

O. Section 31 52 00 – Temporary Cofferdams

P. Section 32 31 13 – Fencing

Q. Section 40 05 59 – Slide Gate

1.3 DESCRIPTION

A. The Work of this Section includes furnishing and placing low permeability cement concrete composed of specified proportions of cement, aggregates, and water mixed to form homogeneous structures for the new dam and associated features and the cap on the top of the raceway wall. Also included in the Work of this Section is the furnishing and placement of reinforcing steel within the concrete structures. All other work incidental to the construction of the reinforced concrete structures, including waterstops, drainage pipes, is also included in this Section.

B. Work includes all formwork, bracing, earthwork, and temporary construction required to build cast-in-place concrete structures as shown on the Drawings. Work includes properly finishing, protecting, and curing cast-in-place concrete.

C. Contractor shall engage an independent testing agency to provide field and laboratory testing services and reports in regard to quality control for cast-in-place concrete. The Contractor shall provide the Engineer a minimum of 48 hours advance notice of concrete placement operations.

1.4 SCOPE OF WORK

A. Reinforced concrete structures to be constructed under the Work of this Section shall include, but not be limited to, a new spillway weir structure with an ogee crest, slab, discharge apron, refurbished raceway walls; a new gate structure with training walls, and associated concrete structures. Concrete shall be a 4,000 psi mix unless otherwise noted. Reinforcing steel shall be uncoated Grade 60 bars unless otherwise noted.

B. The general type of reinforced cast-in-place concrete construction to be executed as part of the Work is as follows:

1. Cast-in-Place Reinforced Concrete – Flat Slabs: This includes the slabs and footing for the ogee spillway and minor protrusions such as underslab cutoffs from these structures.

2. Cast-in-Place Reinforced Concrete – Vertical Walls: This includes the vertical abutment walls and concrete support including training walls for the low level gate, and all concrete not otherwise specified under Flat Slabs or Ogees.

3. Cast-in-Place Reinforced Concrete – Ogees: This includes the ogee spillway crest at the new spillway.

4. Cast-in-Place Referenced Concrete – Caps: This includes the top of the exposed raceway walls on the north and south sides of Brooklyn Street as depicted on the Drawings.

1. 5 SUBMITTALS

A. Reinforcing Steel

1. Shop Drawings: Indicate bar sizes, spacings, locations, and quantities of reinforcing steel, bending and cutting schedules, and supporting and spacing devices.

2. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

3. Submit certified copies of mill test report of reinforcement materials analysis.

B. Concrete

1. Name and address of Contractor's Independent Testing Firm. Accreditation and a brief description of prior work, which is similar to that proposed for this project.

2. Concrete mix design, material test results, and results of strength tests from the trial concrete mixes by the Concrete supplier

3. Manufacturer's cement mill test reports for each shipment of cement, regardless of quantity, prior to incorporation into the work.

4. Product data for proprietary materials and items, including forming accessories, admixtures, curing compounds, non-shrink non-metallic grout.

5. Field Test Results from Contractor's Independent Testing Firm.

6. Independent Laboratory Test Results for 7 Day and 28 Day breaks of concrete samples cylinders made at the Site by the Contractor's Independent Testing Firm. Test results from other frequency breaks (i.e. 14 day, 56 day, etc.) may be required.

C. Two (2) weeks prior to the start of any work involving concrete, the Contractor shall submit a schedule of labor, equipment and methods of concrete placement, curing and protection for approval. As part of this submittal include means and methods of delivering concrete to placement areas.

1.6 QUALITY ASSURANCE

A. Reinforcing Steel

1. Do not fabricate reinforcement until shop drawings have been approved by the Engineer.
2. Perform Work in accordance with CRSI - Manual of Standard Practice, ACI 301, ACI SP-66 and ACI 318. Where contradictions exist, the more stringent code shall govern.
3. Maintain one copy of each document on-Site.
4. Replace all reinforcement with bends and kinks not shown on the approved fabrication shop drawings. Remove from job site all such reinforcement and replace with new fabricated steel. Field bending of reinforcement is prohibited, without prior written approval of the Engineer.

B. Concrete

1. Perform Work in accordance with ACI 301.
2. Maintain one copy of document onsite.
3. Acquire cement and aggregate from one source for Work.
4. Materials and installed Work may require testing and retesting at any time during progress of Work. Retesting of rejected materials for installed work shall be done at the Contractor's expense.
5. Do not use admixtures which will cause accelerated setting of the cement in concrete. Use of calcium chloride will not be permitted.
6. Employ an independent accredited testing laboratory, acceptable to the Engineer.
7. Acceptance of completed concrete work requires conformance with dimensional tolerances, appearance, and strength as specified and indicated.

PART 2 - PRODUCTS

2.1 SECTION INCLUDES

A. Concrete

B. Accessories

C. Steel Concrete Reinforcement

D. Form Materials and Accessories

E. Waterstops

F. PVC Drainage Pipes

G. Backfill

2.2 CONCRETE

A. Ready-mixed, air-entrained, low-permeability concrete secured from a batch or mixing plant concrete in accordance with ASTM C94. Minimum 28-day compressive strength of concrete shall be as specified on the Drawings or 4,000 psi, whichever is greater. Minimum 7-day compressive strength shall be 3,000 psi.

B. The Contractor shall submit to the Engineer, for approval, his/her proposed concrete supplier, source, and type of materials, with current ASTM C-33 aggregate test data, and concrete mix designs by an approved laboratory complete with trial mix data. Trial mixtures will be designed and tested at the maximum slump and air content for each designated class of concrete.

C. The low-permeability cement concrete shall be proportioned per ACI 211.1. The low-permeability cement concrete shall conform to the following requirements of ACI 350R as part of the mix design:

Minimum 28 day compressive strength	4,000 psi
Maximum water/cement ratio	.45
Maximum aggregate size	¾ inch
Maximum air content	6.0 percent (±1.5%)

D. The following table of minimum cement contents for various minimum 28-day compressive strengths (6”x12” Cylinders) are based on air entrained and water reduced mixtures. The use of approved additives other than air entraining and water reducing admixtures shall not affect the minimum cement content.

Minimum 28-Day Compressive Strength	Minimum Cement Pounds per C.Y. Maximum Size Coarse Aggregate			In place Slump (inches)
PSI	1 ½"	¾"	3/8"	
2000	376	423	470	3-5
2500	423	470	517	3-5
3000	470	517	564	3-5
3500	517	564	611	3-5
4000	564	611	658	3-5
4500	611	658	705	3-5
5000	658	705	752	3-5
Percent Air Content	5.0	6.0	7.5	(all air content ±1.5 %)

E. Cement shall be Type II or Type I/II normal Portland cement and admixtures. The cement shall conform to the requirements of ASTM C150 for Portland cement, and shall be either Type II or Type I/II for general use or Type III when high early strength is required. High early strength may also be obtained by use of a non-chloride set accelerating admixture as approved by the Engineer. The use of type III Portland cement will not be allowed in concrete exposed to seawater, sewerage, or soils containing chlorides. However, only one type of cement shall be used in a single placement. Cement shall be fresh, sieved, and free of lumps.

Cement shall not exhibit a flash set or cause on abnormal initial rise of temperature upon engaging with water, and it shall maintain its full plasticity and fluidity during the period required for placing the concrete.

Cement having a uniform color shall be used in all exposed concrete.

F. Fly ash – Class F may be substituted for cement up to a maximum of 15% by weight of the design cement content**.** Fly ash – Class F or equivalent cementitious product shall conform to the requirements of AASHTO M 295 or ASTM C618 – Type F. Fly ash may be used to mitigate Alkali-Silica Reactivity (ASR), however fly ash shall replace no more than 15% by weight of the design cement content and any additional fly ash will be considered fine aggregate. Slag (GGBFS) meeting ASTM C989 may be used to replace no more than 20% by weight of the design cement content. Either fly ash or slag may be used, not both.

G. Cement grout and admixtures for use to fill minor depressions below concrete structures (dental concrete) shall be proposed by the Contractor and will be subject to the Engineer's review and approval for use in the Work.

H. Water shall not exhibit any deleterious effects to the required properties of the concrete. Water shall be clean, clear and free from deleterious amounts of oil, acid, alkali, salts and organic matter and conform to ASTM C94, as well as the following requirements:

1. Acidity 0.1 Normal NaOH 2 c.c. max.*
2. Alkalinity 0.1 Normal HC1 10 c.c. max.*
   *(to neutralize 200 c.c. sample)
3. Total Solids:
   a. Organic 0.01% max.
   b. Inorganic 0.10% max.
   c. Sulphate 0.05% max.

Testing of the water by the Contractor shall be in accordance with AASHTO T26 and the test results shall be submitted to the Town and Engineer for approval.

I. Aggregates:

1. Fine Aggregate: Fine aggregate shall consist of natural sand, manufactured sand, or a combination thereof, conforming to the requirements of ASTM C33, Specifications for "Concrete Aggregates", latest edition. The fineness modulus of the fine aggregate shall be 2.80 plus or minus 0.20 and the percent passing the #200 sieve shall not exceed 2 percent by dry sieving and 3 percent by wet sieving.

2. Coarse Aggregate: Coarse Aggregate shall consist of washed gravel, crushed gravel, crushed stone, or a combination thereof conforming to ASTM C33, Specifications for "Concrete Aggregates" latest edition. Aggregates for lightweight concrete shall conform to ASTM C330, Specifications for "Lightweight Aggregates for Structural Concrete."

3. Select aggregate which is not considered susceptible to Alkali-Silica Reactivity (ASR), in accordance with ASTM C295.

J Admixtures: Air entraining and water reducing admixtures will be used in all concrete as specified. They shall be used in strict accordance with the manufacturer's recommendations and added at the batch plant. Admixtures shall be ready-to-use liquid material, and contain no calcium chloride. Set retarding admixtures will be used at the discretion of the Town and the Engineer when concrete temperatures exceed 80 degrees °F. The use of high range water reducing admixtures will be allowed only with prior approval of the Engineer when circumstances dictate its necessity to facilitate placement.

1. Air Entraining Admixtures: Shall conform to ASTM C260 Specifications for "Air Entraining Admixtures for Concrete." Testing for air entrainment shall be as per ASTM C231.

2. Water Reducing, Retarding, Set Accelerating and High Range Admixtures: Shall conform to ASTM C494 Specifications for "Chemical Admixtures for Concrete."

3. Curing Compounds shall conform to ASTM C309

2.3 ACCESSORIES

A. Bonding Agent. Two component modified epoxy resin.

B. Epoxy Adhesive. Two component epoxy equivalent to HILTI HY150 or equal. Fast setting adhesive shall NOT be used without express permission.

C. Cloth, Burlap, Jute or Kenaf. CCC-C-476C

D. Non-Shrink, Non-Metallic Grout. Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 5000 psi in 48 hours, with zero percent volume change for plastic state in accordance with ASTM C827, such as Five Star Grout by Five Star Products, Upcon 262 by Emhart Chemical Group or approved equivalent.

E. Surface Finishing / Patching Cement. Premixed fast setting non shrink patching cement with integral bonding agent, such are ConproSet or approved equivalent.

F. Fill-Side Waterproofing. A bituminous based waterproofing product meeting the Specifications of the Connecticut Department of Transportation.

2.4 STEEL CONCRETE REINFORCEMENT

A. Uncoated Reinforcing Steel Bars: ASTM A615, 60 ksi yield Grade 60 deformed billet steel, unless otherwise indicated.

B. Tie Wire: Mild steel or annealed iron, minimum 16 gauge.

C. Splice Devices: Sleeve or coupler type, sized to develop minimum 125 percent of bar yield strength.

D. Supports: Provide supports, such as chairs, bolsters, spacers, blocks, hangers, or other devices to support and position reinforcement, of adequate strength and accepted design to prevent displacement of reinforcement. Supports of any type coming in contact with form work shall be plastic or stainless steel.

E. General. After bar list and shop drawings have been accepted, fabricate each unit of reinforcement to conform to the type, shape, and size indicated on the accepted bar list and shop drawings.

F. Cutting and Bending. Perform cutting and bending of reinforcing bars before shipment to the site in manner consistent with ASTM and specification CRSI Manual of Practice. Field bend cold.

G. Dowels: Dowels through construction joints shall be considered a part of the Work. These shall be cast monolithically into the concrete and not drilled in after the concrete has been placed. These dowels shall be deformed bars, sized as shown, conforming to ASTM A615, Grade 60 unless otherwise indicated. Dowel shall be No. 6 bars unless otherwise indicated.

2.5 FORM MATERIALS AND ACCESSORIES

A. Plywood Forms:

1. Material: Material shall not be reactive with concrete and shall provide a finish equivalent in smoothness and appearance to plywood conforming to PS-1, Exterior Type Grade B-B. Each panel shall be labeled with grade trademark of APA/EWA.
2. Provide forms which will not deflect beyond finish specified tolerances or indicated on the Drawings.

B. Prefabricated Forms

1. Preformed Steel Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
2. Form Liners: Smooth, durable, grainless and non-staining hardboard, unless otherwise shown on Drawings.
3. Framing, Studding and Bracing: Stud or No. 3 structural light framing grade.

C. Accessories

1. Form Ties: Provide ties fitted with devices that will form cone shape holes in the concrete surface not less than 3/8 inch interior diameter or more than 1 ¼ inch exterior surface diameter and at least 1 ½ inches deep such that the portion of the concrete tie remaining in the concrete will be at least 1 ½ inches back from the concrete surface.

2. Spreaders: Standard, non-corrosive metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. Wire ties, wood spreaders or through bolts are not permitted.

3. Form Anchors and Hangers: Do not leave exposed anchors and hangers on concrete surface. Symmetrically arrange hangers supporting forms from structural steel members to minimize twisting or rotation of member. Penetration of structural steel members is not permitted.

4. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture.

5. Corners: ¾ inch x ¾ inch triangular fillet type, milled clear straight-grain pine, surfaced each side, or extruded vinyl type, with or without nail flange to form all exposed concrete wall edges.

6. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength and character to maintain formwork in place while placing concrete.

2.6 WATERSTOPS

A. Water-stops shall be ribbed PVC with center bulb type placed through the construction joint as shown on the Drawings extruded polyvinyl chloride PVC. Approved products include "Greenstreak #735", "Greenstreak #727," or Engineer approved equal.

B. For flat slab construction joints, a polyurethane-based, non-sag elastomeric sealant surface sealer shall be provided above a backer bar.

C. For waterstops where new concrete is to adjoin existing concrete, masonry, or other material, waterstops shall consist of bentonite-free preformed swellable waterstops such as the SikaSwell Profile product (or Engineer approved equal) used in conjunction with an extruded waterstop adhesive such as SikaSwell S-2 (or Engineer approved equal).

D. Other types of waterstops shall be as noted on the Drawings.

2.7 PVC DRAINAGE PIPES

A. Where called for, PVC Drainage pipe for use in the weepholes or other seepage collection systems shall be Type I, Schedule 80 pipe conforming to ASTM D1785-99. Joints shall be made as per ASTM D 2855. The ends shall be covered with a galvanized metal fabric. DO NOT INSTALL WEEPHOLES UNLESS SPECIFICALLY CALLED FOR BY THE DRAWINGS.

2.8 BACKFILL

A. Backfill material shall be as shown on the Drawings and conform to the material specifications in Section 31 05 13 – Soils and Aggregate for Earthwork.

PART 3 - EXECUTION

3.1 SECTION INCLUDES

A. Methods of Preparation and Delivery

B. Construction Methods

C. Placing, Supporting and Splicing Reinforcing Steel

D. Field Quality Control and Testing

E. Waterstops

3.2 METHODS OF PREPARATION AND DELIVERY

A. See ASTM C94 - Standard Specification for Ready-Mixed Concrete

3.3 CONSTRUCTION METHODS

A. General

1. Reinforced concrete shall be constructed to the dimensions and design indicated on the Drawings, to the lines and grade shown and as directed by the Engineer, with reinforcement as required, and where necessary, at the direction of the Engineer.

2. Work includes setting all reinforcement and inserts furnished under this Section to be embedded in cement concrete including all water-stops and dowels. The concrete after setting and finishing shall be true to required dimensions and shall be of high quality and exhibit an approved finish and workmanship.

3. Contractor shall provide mix designs for the specified class of concrete. Each of the laboratory design mixes shall be varied as directed by the Town and Engineer until a mix has been produced that meets the requirements of these Specifications and which receives the written approval of the Engineer. The approved mix design shall not be varied unless such change is directed by the Engineer.

4. No concrete shall be formed or placed until all sediment control, water control, masonry and rock surface preparation, and anchor bar installation work has been completed.

5. The Contractor shall provide and maintain all necessary equipment for the control of water flows within the limits of new concrete areas in order to permit assembly of reinforcement (and related appurtenances), and placement of concrete to be conducted in the dry.

B. Forms

1. Approved centers and forms shall be provided by the Contractor. No extra compensation for false work will be allowed, such work being considered a part of the form work. False work shall be set to give the structural sizes indicated on the Drawings or as specified, plus allowance for shrinkage or settlement. Forms, except as hereinafter specified, shall be made of planed lumber or form plywood and shall conform to the design of the work.

2. Inserts, anchors and support systems shall be installed by the Contractor, including reinforcing steel, water-stops, and dowels and such similar items that are required to be incorporated into the concrete construction. It is the responsibility of the Contractor to insure that all inserts are accurately installed and securely held in place immediately prior to placing the concrete, and to insure that these devices are inspected and approved by the Engineer at least 24 hours before placing concrete. Concrete placed without such approval of the Engineer may be rejected and removed at no additional cost to the Owner.

3. All forms shall be cleaned and repaired as required and oiled prior to each placement. Defective forms with unplugged holes or other defects shall not be used.

4. The sheathing shall be joined tightly to prevent leakage from the mix and it shall be of sufficient strength to hold the concrete without bulging between supports. Forms shall be properly braced and tied so as to maintain correct dimensions. Bolts, rods or approved form ties shall be used for internal ties. Wire ties will not be permitted except when directed or where concrete is not exposed to view.

5. Prior to placing concrete in the forms, all foreign matter, lumber and wire ends shall be removed.

6. The forms shall be true to the lines, satisfactorily supported and firmly secured. They shall remain in place as long as directed and shall be replaced by new forms if they lose their proper dimensions or shape.

7. All forms shall be treated with non-staining mineral oil or other approved release agent before placing the concrete. The release agent shall be applied before the reinforcing steel is placed. Any material which will adhere to or discolor the concrete shall not be used.

8. Use steel, plywood or lined board forms as forms for “Smooth Finish” Concrete. Use clean and smooth plywood and form liners, uniform in size, and free from surface and edge damage capable of affecting resulting concrete finish. Install form lining with close-fitting square joints between

separate sheets without springing into place. Use full size sheets of form lines and plywood wherever possible. Tape joints to prevent protrusions in concrete. Use care in forming and stripping wood forms to protect corners and edges. Level and continue horizontal joints. Keep wood forms wet until stripped.

9. Provide removable cleanout sections or access panels at bottoms of forms to permit inspection and effective cleaning of loose dirt, debris and waste material. Clean forms and surfaces against which concrete is to be placed. Remove chips, saw dust and other debris. Thoroughly blow out forms with compressed air just before concrete is placed.

C. Handling and Placing Concrete

1. Within 10 days from Notice to Proceed, the Contractor shall submit a schedule of labor, equipment and methods of concrete placement, curing and protection for approval. As part of this submittal, include means and methods of delivering concrete to placement areas. Failure to submit aforementioned schedule or demonstrate operation of equipment at the Engineer's request may be just cause for cancellation of the schedule placement.

2. Aluminum shall not be used in any equipment where it would be in permanent or abrasive contact with fresh concrete.

3. Whenever possible, place concrete during normal working hours. When concrete placement schedules require concrete placement at times other than normal working hours, notify the Engineer of special conditions at least 48 hours in advance of placement. Notify Engineer at least 48 hours prior to commencement of concrete placement operations. Include within this notification, the quantity of concrete, method and placement location, frequency of trucks, ordered slump and time of initial delivery.

4. Provide a delivery batch ticket to the Engineer, written in ink or computer printed, with each batch delivered to the discharge location, and as specified in ASTM C94 and in addition, state the following:

   i. Load number, truck number and driver's name;
   ii. Volume of Concrete (Cubic Yards);
   iii. Mix designation number;
   iv. Actual batch weights of cement, fine and coarse aggregate, admixtures, and water;
   v. Time batched;
   vi. Signature of ready-mix representative.

5. Failure to provide this information at delivery will be considered cause for rejection of the load.

6. Additional information which may be required at the discretion of the Engineer is as follows:

   i. Compression strength of concrete;
   ii. Reading of revolution counter at first addition of water;
   iii. Type, brand and amount of cement;
   iv. Type, brand and amount of admixture;
   v. Information necessary to calculate total mixing water;
   vi. Maximum size of aggregate.

D. Transportation

1. Order concrete from batching plant so that trucks arrive at discharge locations when the concrete is required. Avoid excessive mixing of concrete or delays in placing successive layers of concrete in forms. The concrete supplier shall deliver concrete to discharge locations in watertight agitator or mixer trucks without altering the specified properties of water-cement ratio, slump, air-entrainment, temperature and homogeneity. Deliver concrete in order that the Contractor can accept delivery within 90 minutes after batching or earlier during hot weather concreting as specified. Do not add retempering water, nor exceed the specified water-cement ratio. The Engineer shall reject concrete not conforming to specification, unsuitable for placement, exceeding time limitation restraints, and not having a complete delivery batch ticket.

2. The concrete shall be transported from the mixer and placed in the forms by a method which will permit handling concrete of the slump required without segregation. Buggies and wheelbarrows used for this purpose shall be equipped with pneumatic tires. Chutes shall be metal or metal lined, inclined so as to have a slope of between 2 and 3 horizontally to 1 vertically. Long chutes shall be provided with reversed flow or re-mixing hoppers in order to correct for segregation.

3. Transportation of concrete by pumping is considered a suitable means for delivering concrete. The equipment shall be suitable in kind and adequate in capacity for the work. The equipment and operation shall conform to the requirements of the latest ACI Specifications for Masonry, Placing Concrete by Pumping. The operation shall be such that a continuous stream of concrete without air pockets is produced. When pumping is completed, the concrete remaining in the pump-line shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients.

4. At the conclusion of placement, the entire equipment shall be thoroughly cleaned and all waste and debris shall be legally disposed of off site in accordance with federal, State and local laws, regulations and ordinances. The number and lengths of flexible lines used for pumping concrete shall be

kept to the minimum required for proper distribution. Transition sections for reducing the diameter of the lines shall be of slick-line material and shall be as long as possible.

E. Placing Concrete

1. Place concrete in accordance with ACI 301. Deposit concrete at its final position in formwork, to preserve slump, air content, and homogeneity in accordance with ACI 304, and as specified herein. Clean out forms of all soil and debris prior to placement. Wet forms and existing concrete but remove standing water. Concrete shall be properly distributed in the forms by shoveling. The forms shall be filled in horizontal layers 1½ to 2 feet thick maximum, with each layer extending completely across the forms. Do not allow concrete to fall freely in forms to cause segregation. Do not move concrete horizontally more than four feet from the point of discharge. Space points of deposit not more than eight feet apart. Care shall be taken to avoid splashing the forms and reinforcing above the level of the mix. Do not interrupt successive placement; do not permit cold joints to occur. Do not deposit partially hardened concrete in forms. Retempering of partially hardened concrete is prohibited. Remove all partially hardened concrete from Site at no additional compensation

F. Consolidation

1. Consolidate concrete in accordance with ACI 309. Each layer shall be thoroughly consolidated by vibration. The face of the forms shall be carefully spaded to bring a dense mortar to the face, and produce a good finish.

2. All concrete, unless otherwise directed, shall be compacted by means of approved mechanical vibrators operated within the mass of the concrete. The Contractor shall provide approved methods of vibration to fully consolidate the mix. Vibrators shall be of internal type, of standard make and approved capacity, and shall be capable of transmitting vibrations to the concrete at frequencies of not less than 4500 impulses per minute.

3. Vibration of forms or reinforcing shall not be permitted except where internal vibration is not practical and then only with approval of the Engineer for each specific application.

4. The vibrator shall be applied directly to the mass at the point and time of deposit and move throughout the mass continuously from point to point in the mix using care to avoid hitting the forms, over-vibration, causing segregation, over-finished surface and excess water gain.

5. Vibrators of sufficient number and size shall be provided to obtain proper placing in accordance with the rate of deposit. At least one spare of each type vibrator required shall be on hand at all times.

6. Extreme care shall be taken to prevent penetrating or disturbing previously placed concrete which has become partially set.

G. Joints

1. Construction Joints

i. Concrete in structures shall be placed in such a manner that all construction joints shall be exactly horizontal or vertical, as the case may be, except as otherwise specified, and that they shall be straight and as inconspicuous as possible.

ii. When construction joints are indicated, all concrete between consecutive joints shall be placed in a continuous operation.

iii. In order to allow for shrinkage, concrete shall not be placed against the second side of the construction joints for at least 12 hours after that on the first side has been placed.

iv. Approval from the Engineer in writing must be secured before the placing of any construction joints not indicated in the plans.

v. Unless otherwise indicated, interlocking or keying at construction joints shall be provided by use of keyways and/or dowels in a manner approved by the Engineer.

vi. Concrete shall be placed in the order of the sequence of construction. All longitudinal and transverse construction joints shall be formed as described herein and as indicated.

2. Bonding to Concrete Already Set

i. In all locations where new concrete is going to be placed on or adjacent to existing masonry, existing concrete, and/or newly placed mass concrete, the surface of the said masonry or concrete shall be thoroughly cleaned of all dust, particles and otherwise deleterious material via high-pressure air or water jetting.

ii. No reinforced concrete may be placed until preparation of all contact surfaces has been approved by the Engineer.

H. Protection

Suitable precautions shall be taken to thoroughly protect the concrete from any damage by weather conditions or otherwise during and after placing.

1. Warm and Dry Weather. During warm or dry weather, and as directed all curing concrete shall be water-cured throughout the curing period.

2. Rainy Weather. During rainy weather all curing concrete shall be properly covered, as may be necessary to prevent damage. Sufficient approved material for covering shall be available at the site of the work for immediate use as may be needed.

3. Cold Weather. During cold weather all curing concrete shall be fully protected, by methods approved by the Engineer, until properly set and hardened to prevent damage. Cold weather concrete shall be protected at the required minimum temperature according to ACI 306, specifically regarding the minimum number of days that temperature protection must be maintained.

I. Finishing

1. Formed Surfaces not exposed to view shall be finished to produce a surface within Class B tolerance throughout. Form ties shall be cut back from the face of the concrete and all voids and cavities shall be filled with a stiff mortar mix compatible with the bulk concrete.

2. Formed Surfaces exposed to view shall be finished to produce a surface within Class A tolerance throughout. Form ties shall be cut back from the face of the concrete and all voids and cavities shall be filled with a stiff patching / finishing mortar mix compatible with the bulk concrete and of the same color. All irregularities shall be removed to produce a smooth and uniform surface. Additional finishing shall be done by rubbing with a No. 10 carborundum brick or other abrasive of equal quality. All finishing of concrete walls shall take place immediately after removal of formwork.

3. Horizontal Surfaces shall be finished as follows:

   a. Floated Finish: After the concrete has been placed, consolidated, struck off and leveled, do not work the concrete further until ready for floating. Begin floating when the water sheen has disappeared and when the surface has stiffened sufficiently to permit the operation. During or after the first floating, check planeness of surface with a 10-ft straightedge applied at not less than two different angles. Cut down all high spots and fill all low spots during this procedure to produce a surface within Class B tolerance throughout. Immediately refloat the slab to a uniform sandy texture.

   b. Troweled Finish: First float-finish the surface as specified above, then power-trowel, and finally hand-trowel. With the first troweling

after power floating, produce a smooth surface which is relatively free of defects but which may still show some trowel marks. Perform the final troweling when a ringing sound is produced as the trowel is moved over the surface. Thoroughly consolidate the surface by the hand troweling operations. Produce a finished surface which is essentially free of trowel marks, uniform in texture and appearance, and plane to a Class A tolerance.

c. Roughen Finish: At horizontal surfaces where concrete is placed on top of other concrete to create a monolithic structure, or horizontal surfaces where a cap stone will be placed, a roughened surface shall be provided by brooming or otherwise scarifying the surface following floating.

J. Curing

1. All concrete shall be cured according to the latest ACI Specifications (ACI 308 Standard Practice for curing concrete; ACI 301, ACI 305 or ACI 306 as applicable). Notify the Engineer of curing method and period prior to concrete placement.

2. All concrete shall be kept fully saturated and protected against any drying action and rapid change in temperature, by the curing method specified herein only, for not less than 14 days after placing cement concrete.

3. Curing shall be accomplished by the method of water curing only. Membrane curing compounds shall not be used except in limited areas as approved by the Engineer.

K. Removal of Forms

1. If necessary, the forms for any portion of the structure shall not be removed until the concrete is strong enough, as determined by the Engineer, to avoid possible injury from such removal. Forms shall not be removed or disturbed without the prior approval of the Engineer. Form supports shall be removed in such a manner as to permit the concrete to take the stresses due to its own weight uniformly and gradually.

2. The minimum compressive strength for the type of concrete prior to removing forms or loading the structure shall be not less than seventy-five (75) percent of the design strength as demonstrated by a concrete cylinder test. In no event shall forms be removed from concrete less than 3 days following placement.

3. Any defective work discovered after the forms have been removed shall be immediately removed and replaced. If the surface of the concrete is bulged, uneven or shown excessive voids or form joint marks which cannot be

repaired satisfactorily, the entire section shall be removed and replaced. All repairs and renewals due to defective work shall be done at the expense of the Contractor.

L. Concrete Construction During Cold Weather

1. Cold weather is defined as any time during the concrete placement or curing period the ambient temperature at the work site drops below 40°F or when the temperature may reasonable be expected to drop below 35°F within 24 hours. **Concrete shall not be placed during cold weather, except with written approval by the Engineer, which will not be granted until satisfactory provisions have been made to protect the work.** Cold weather concreting shall conform to ACI 306R. Any concrete placed during cold weather shall be placed at the Contractor's risk and any damage or unsatisfactory concrete shall be removed and replaced at the Contractor's expense. When cold weather is reasonably expected or has occurred within 7 days of anticipated concrete placement, the Contractor shall submit detailed procedures for the production, transporting, placing, protecting, curing, and temperature monitoring of concrete during cold weather. All material and equipment required for cold weather placement and curing protection shall be available at the project site before commencing concrete placement. All snow, ice, and frost shall be removed from the surfaces, including reinforcement and subgrade, against which the concrete is to be placed. The temperature of any surface that will come into contact with fresh concrete shall be at least 35°F and shall be maintained at a temperature of 35°F or above during the placement of concrete.

2. The minimum concrete surface temperature requirements indicated in the Table below shall be continuously maintained for a curing period of at least 7 days. The 7 day minimum curing period of time will be extended when necessary to develop satisfactory strength in the concrete. Any day during which the minimum concrete surface temperature requirement is not continuously maintained shall not count as a day contributing to the curing period.

Cold Weather Concrete Surface Temperature Requirements				
	Minimum Section Size Dimension			
	Under 1 foot	1-3 feet	Over 3 ft. up to 6 ft	Over 6 feet
Minimum temperature of concrete during curing period	14°C (57°F)	12°C (54°F)	10°C (50°F)	10°C (50°F)
Maximum allowable temperature drop in any 24-hour period after end of curing	28°C (50°F)	22°C (40°F)	16°C (30°F)	11°C (20°F)

3. As much as possible, any enclosure for protection shall be in place before depositing of any concrete and the remainder shall be installed as rapidly as possible in order to reduce heat losses to a minimum. Heating within the enclosure shall be attained by such means of artificial heat as will maintain the temperatures specified continuously and with a reasonable degree of uniformity in all parts of the enclosures. All exposed surfaces of concrete within the enclosure shall be kept sufficiently moist to prevent any drying of the surface concrete with possible resulting damage to the concrete in place. Heating appliances shall not be placed in such a manner as to endanger the enclosure, forms or supports, or expose any area of concrete to drying out or other injury due to excessive temperatures.

M. Concrete Construction During Hot and Dry Weather

1. During hot dry weather, and as directed, all new concrete shall be kept shaded from the sun, shielded from the wind and kept wet with water, or protected by other approved methods to retain the moisture in the concrete throughout the curing period. During concrete placement operations in hot weather, appropriate measures shall be taken to reduce the hazards of increased rate of cement hydration, flash set, loss of water due to evaporation, high concrete ingredient temperatures, and the increased difficulty of concrete placing and finishing. The following requirements shall be met during concrete placement operations in hot weather:

Concrete Temperature. The temperature of the concrete at the point of discharge shall not exceed 26.7°C (80°F). Concrete shall not be placed when the internal temperature of the concrete is 80°F or above.

Cooling Materials. The Contractor may reduce the temperature of the concrete by cooling one or more of several ingredients. The aggregates may be cooled by fogging, or other suitable means that will not result in a high variation of moisture content within the stockpile. Chipped or crushed ice may be used in the mix as a portion of the mixing water on a pound for pound basis, provided such measure is determined at the time it is placed in the mix. If used, all ice shall be melted before the batch is discharged from the mixing unit. Ice shall be added with the approval of and/or as directed by the Engineer. Water may also be cooled by refrigeration or other means that provide a uniform mixing water temperature.

Concrete Placing. Immediately before the concrete is placed, the forms and reinforcement steel shall be cooled by spraying with water. In no case shall there be any standing water in the concrete forms as a result of the spraying procedures. The Contractor shall have sufficient skilled men and adequate equipment to place the concrete without delays which may cause excessive slump loss and evaporation due to over-mixing or exposure before it is placed.

Conform to ACI 305R when concreting during hot weather. Alternatively, when concrete temperatures exceed 80°F, a set retarding admixture conforming to ASTM C494 type B or D may be added to the concrete mix as approved by the Engineer.

Finishing. To prevent shrinkage cracking resulting from moisture loss, the Contractor may be required to furnish windscreens, to use water fogging, or other approved means of supplying moisture. If the use of windscreens is required, the windscreens shall consist of canvas barriers of suitable height erected on the windward side of the concrete placement. Finishing operations shall follow as closely as practicable behind the placing operation so that curing may begin as soon as possible.

N. Waterproofing

1. An approved waterproofing compound shall be applied where indicated. The waterproofing compound shall be applied as per the manufacturer's specifications. When, indicated, all joints shall also be treated with the waterproofing compound as per the manufacturer's instructions.
2. Waterproofing shall be applied to all vertical concrete surfaces in direct contact with backfill unless otherwise specified.

3.4 PLACING, SUPPORTING AND SPLICING REINFORCING STEEL

A. Reinforcing steel shall be clean and free of dirt, scale, paint, oil, grease and other foreign matter when placed in the work. Metal reinforcement coated with firmly bonded rust, mill scale, or a combination of both shall be considered satisfactory provided the minimum dimensions and weight of a hand wire-brushed test specimen are not less than the applicable specification requirement. Rust or mill scale which is difficult to remove by vigorous scrubbing with a wire brush shall be considered firmly bonded to the steel.

B. Arrange and place reinforcement as shown on the diagrams, placement plans, and in accordance with the required tolerances. Concrete shall not be placed in any member until the reinforcement steel has been inspected and approved by the Engineer.

C. Support and secure reinforcement together as required in accordance with the following requirements:

1. Prevent displacement, by construction loads or by the placing of concrete reinforcement and concrete, beyond the required tolerance.
2. Tie or clip bars together securely; weld only where permitted by the Engineer.

3. Maximum spacing of bar supports: six feet.

D. Minimum concrete protective covering shall be as shown on the Drawings unless otherwise noted or directed by the Engineer.

E. Support reinforcing bars imposition by means of accepted spacers, chairs or hangers.

F. Maintain the specified tolerances between reinforcement and the forms by means of stays, blocks, ties, hangers, or other accepted supports.

G. Furnish reinforcing bars in full lengths to the extent practicable. Splices and laps will be permitted only where shown on the accepted shop drawings or as otherwise permitted by the Engineer. No splices will be permitted at points where the section does not provide a minimum distance of 2 inches between splices and the nearest adjacent bar or the surface of concrete. The bars shall be rigidly clamped or wired at all splices. Sheets of metal mesh shall overlap each other sufficiently to maintain uniform strength and shall be securely fastened at the ends of the edges. Splices made with mechanical connectors shall be as detailed on the Drawings or as permitted and shall develop at least 125% of the specified yield strength of the reinforcing bar being spliced. The minimum concrete cover over the reinforcing steel as shown on the Drawings shall be maintained at the mechanical splice.

3.5 FIELD QUALITY CONTROL AND TESTING

A. Testing Agency: The Contractor shall engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Testing by the Contractor's independent agency shall be supplemental to the Engineer's own testing and in the event of conflict between results, the Engineer's Testing Lab results shall prevail.

B. Testing Services: The Contractor shall be responsible for coordinating with the Testing and Inspection Agency during the placement of concrete. Test results for field tests shall be immediately reported to the Engineer. Testing of composite samples of fresh concrete obtained according to ASTM C172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 CY, but less than 25 CY, plus one set for each additional 50 CY or fraction thereof. Measurements shall be taken not less than once per day.

2. Slump: ASTM C143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C231, pressure method, for normal-weight concrete; ASTM C173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.

4. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40° F and below and when 80° F and above, and one test for each composite sample.

5. Unit Weight: ASTM C567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.

6. Compression Test Specimens: ASTM C31/C31M:

   i. Cast and laboratory cure one set of six (6) standard cylinder specimens for each composite sample.

7. Compressive-Strength Tests: ASTM C39:

   i. Test two laboratory-cured specimens at 7 days and two at 28 days.
   ii. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated. One average for lab cured specimens and a separate average for field cured specimens.
   iii. Two remaining cylinders shall be retained until notified by the Engineer of approval for disposal.

C. When strength of field-cured cylinders (if required) is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

D. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

E. Test results shall be reported in writing to the Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by the Engineer. Testing and inspecting agency may conduct tests to determine adequacy of

concrete by cored cylinders complying with ASTM C42 or by other methods as directed by the Engineer.

G. Load Testing.

1. Should the compression test of the cores taken from the structure fail to be in compliance with these Specifications, the Contractor will be directed by the Engineer to conduct a load test of the structure in conformance with ACI 318 under the direction of the Contractor's laboratory testing firm. Should the load test fail, the structure shall be removed from the site and replaced. All tests associated with the load testing and removal and replacement of the structure will be by the Contractor, at no cost to the Owner.

2. Allow the Engineer to inspect concrete surfaces immediately upon removal of forms. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify the Engineer immediately upon discovery. Patch imperfections as directed by the Engineer in accordance with ACI 301. Core holes shall be roughened, cleaned and dampened. Fill core holes with 4000 psi (minimum) concrete and wet cure for 7 days after placement.

H. Acceptance of Concrete at Site:

1. Reject concrete delivered without a complete concrete delivery batch ticket as specified. Copies of the signed batch ticket will be furnished by the concrete supplier to the Contractor and the Engineer. Inspect the concrete transit truck's barrel revolution counter and gauge for measuring water added to the concrete. Reject concrete which exceeds the maximum barrel revolution of 300 or which has had water added during transit. Reject concrete exceeding specified time limitations. Concrete not conforming to these Specifications shall be rejected by the Contractor or the Engineer before discharging into the forms.

3.6 WATERSTOPS

A. **Approved waterstops shall be provided at all vertical and horizontal joints**. Install waterstops prior to the placement of concrete. For horizontal slab joints where indicated, sawcut green concrete above water stop and provide backer bar and elastomeric sealant.

END OF SECTION

DIVISION 04
MASONRY

SECTION 04 05 00 - REPAIR OF STONE MASONRY WALLS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Safety and Access

D. Submittals

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 35 43 – Environmental Procedures

D. Section 01 50 10 – Temporary Water Control

E. Section 01 57 13 – Temporary Erosion and Sediment Control

F. Section 01 66 00 – Product Storage and Handling Requirements

G. Section 31 52 00 – Temporary Cofferdams

1.3 DESCRIPTION

A. The Work of this Section shall be to supply all materials, equipment, labor, and incidentals necessary to conduct miscellaneous repair of the existing stone masonry portions of the raceway walls. The repair/repointing of the raceway walls shall be done in conjunction and simultaneous with construction of the new dam.

B. The intent of the work is to improve the stability and durability of the existing exposed portions of stone masonry wall sections where necessary. The Work includes:

1. In-filling exposed voids with grout, concrete, or mortar; and

2. Cleaning and raking joints of the existing stone masonry and replacing the surface mortar in the stone masonry joints (repointing).

C. Contractor is responsible for familiarizing himself with the existing conditions of the raceway walls. A video survey documenting conditions of the raceway walls will be provided upon request.

D. Work shall specifically include all necessary provisions for safe access to the work areas, including scaffolding, ropes, and other such methods.

E. Temporary Water Control measures consistent with Section 01 50 00 – Temporary Water Control and all applicable permits and approvals shall be in place during all stone masonry wall filling and repointing activities. Temporary Water Control measures shall be maintained until all mortar and grout materials have cured and the Engineer has approved the Work.

1.4 SAFETY AND ACCESS

A. The Contractor shall be responsible for the provision of access to the work area and safe working conditions in accordance with the Site Specific Health and Safety Plan and all local, State, and federal safety codes.

B. All heavy equipment shall remain on the land side of the walls.

1.5 SUBMITTALS

A. In the Dam Construction Work Plan, Contractor shall provide written details on stone masonry wall filling and repointing procedures including the following:

1. Documentation for all materials to be used for the Work of this Section, including mortars and grouts.

2. An access plan showing the proposed method of accessing the Work areas and providing a safe and stable working platform.

3. Methodology for filling and repointing walls that are to be repaired.

4. Mortar and grout mixes, and associated test data indicating required strength.

PART 2 - PRODUCTS

2.1 SECTION INCLUDES

A. Mortar

B. Grout

C. Concrete

D. Water

2.2 MORTAR

A. Standard Portland Cement Mortar shall be in general conformance with ASTM C270, Specification for Mortar for Unit Masonry. Minimum 7-day compressive strength shall be 4,000 psi as per ASTM C-109 Modified. Materials shall be as follows:

1. Portland cement: ASTM C150 Type I/II or Type II, grey or white as required to match original mortar. Fly ash, slag and pozzolans are not permitted as substitutes for Portland cement.

2. Hydrated Lime: ASTM C207 Type S, incorporated as a finely divided powder in uniform particle size, free of lumps, flakes or other inconsistencies.

3. Mortar Aggregate: ASTM C144 Natural sand blend, rounded to sub-angular in shape, washed, screened and dried, with zero or near zero -270 crystalline silica content. Aggregate to be selected to match the color and texture of the original mortar aggregates as closely as possible while remaining in compliance with ASTM C144 grading and soundness requirements.

4. Mortar Colors: Inorganic mineral oxides meeting the requirements of ASTM C797, at levels not to exceed 10% on cement weight, except for carbon black, which may not exceed 2% on cement weight.

5. Admixtures: No admixtures shall be used without approval by the Engineer. Calcium chloride is not permitted in any mortar. Admixtures containing more than 0.1% chloride ions are NOT permitted.

B. Mortar for masonry repointing shall be standard Type S masonry mortar conforming to ASTM C270.

2.3 GROUT

A. Grout for injection grouting of masonry shall be a non-shrink grout conforming to ASTM C1107 and having a minimum 28-day strength of 8,000 psi, as determined by ASTM C109 modified per ASTM C1107.

B. Acceptable products shall be:
1. Harris Non-Shrink Grout
2. Five Star Non-Shrink Grout
3. SikaGrout 212
4. Approved Equivalent

C. Cement grout and admixtures shall be approved by the Engineer prior to use.

2.4 CONCRETE

A. Ready-mixed, air-entrained, low-permeability concrete secured from a batch or mixing plant concrete in accordance with ASTM C94. Minimum 28-day compressive strength of concrete shall be as specified on the Drawings or 4,000 psi, whichever is greater. Minimum 7-day compressive strength shall be 3,000 psi.

2.5 WATER

A. The water used in the grout shall be potable, fresh, clean, and free from deleterious materials.

PART 3 – EXECUTION

3.1 SECTION INCLUDES

A. In-Filling and Repointing

3.2 IN-FILLING AND REPOINTING

A. Cleaning of Exposed Masonry Surface

1. Specified exposed surfaces shall be inspected by the Contractor and cleaned of all vegetation, deposits, sediment, loose substrate, and any other deleterious material by use of sandblasting, high pressure waterblast, high pressure air, and/or with hand tools such as hammer and/or brush. No chemicals or other materials shall be used in cleaning.

2. Barriers should be constructed to collect cleaning debris and water for disposal such that cleaning debris does not infiltrate into the raceway. Procedures shall be taken to minimize contamination of the raceway, waterways, or wetland areas due to cleaning procedures.

3. Cleaning and refinishing of exposed masonry surfaces shall be undertaken such that a uniform appearance results without damaging the stone masonry.

B. Examination and Preparation of Area

1. Examine missing, deteriorated, or displaced masonry and joints on the masonry walls to determine which repairs will be necessary.

2. Consult with Engineer prior to performance of the Work to determine the extent of masonry wall filling and repointing activities.

C. Masonry In-Filling

1. Fill large voids or gaps in the stone masonry walls with grout, concrete, or mortar.

2. Grout, concrete, or mortar shall be placed by either mechanical or manual methods that are pre-approved by the Engineer.

D. Masonry Repointing

1. Rake and clean out or remove any deteriorated or loose mortar, stone, or foreign material which would interfere with the repointing.

2. Moisten joint and surrounding masonry. Condition should be saturated surface dry without standing water in joints.

3. Insert repointing mortar into joint to full depth. Tool joint to provide a concave shape.

4. After initial set, brush area to remove residual mortar or laitance.

END OF SECTION

DIVISION 05
METALS

SECTION 05 30 00 - METAL DECKING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Description

D. Scope

E. Submittals

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 35 43 – Environmental Procedures

D. Section 01 66 00 – Product Storage and Handling Requirements

E. Section 03 30 00 – Reinforced Cast In-Place Concrete

F. Section 05 52 13 – Pipe and Tube Railings

1.3 REFERENCES

A. ASTM A123/A123M-09: Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

B. ASTM A322-07: Specification for Steel Bars, Alloy, Standard Grades

1.4 DESCRIPTION

A. This Section relates to the design, materials of construction, fabrication, furnishing, and installation of galvanized steel floor grates for use as metal decking at the slide gate operator level at the relocated Paper Mill Pond Dam.

B. The purpose of the metal decking is to provide access to the operator mechanism for the new slide gate mechanism as shown on the Drawings.

C. Metal decking shall be supported on galvanized steel angles embedded or

anchored to the concrete structure.

1.5 SCOPE

A. The Work shall include the fabrication, provision, and installation of galvanized steel metal decking. All metal decking will include a corrosion resistant coating and black color. The Contractor shall also provide and install support systems for the metal decking and securing and locking systems. Standard duty steel floor grates – 100 psf live load rated – shall be provided.

1.6 SUBMITTALS

A. In the Dam Construction Work Plan, Contractor shall provide details on the installation of the metal decking including methods for anchoring the supporting galvanized steel angles to the concrete structure.

B. Not less than five days prior to the scheduled start of fabrication, the Contractor shall submit shop drawings and material data for the floor grates, including verification of load rating and support and locking system details.

PART 2 - MATERIALS

2.1 SECTION INCLUDES

A. Metal Decking

B. Metal Decking Supports

C. Metal Decking Restraining/Locking System

2.2 METAL DECKING

A. Metal Decking shall be fabricated from carbon steel conforming to ASTM A322-07, Commercial Quality and hot-dip galvanized as per ASTM A123/A123M-09. In general panels shall be provided in equal sections, shall be interchangeable, and shall weight no more than 350 pounds each.

B. Metal Decking shall be sized as shown on the Drawings.

C. Metal Decking shall be provided with structural support rods or bars and transverse tread bars. Bars may be welded or pressure-locked together to provide for a stiff uniform grate.

D. Metal Decking shall be designed to support a minimum uniform live load of 100 psf with an appropriate factor of safety. The minimum support rod depth shall be 1 ½-inch deep galvanized steel bar grate, banded at the perimeter, but these

minimums shall be increased as necessary to provide the load rating as specified above.

E. Metal Decking shall provide a safe walking surface (serrated).

F. No individual section shall weigh more than 100 lbs.

G. Metal Decking shall be finished so as to include a rust inhibitor layer (galvanized or other), an appropriate primer coat, and powder coat surface which is UV and chip resistant. This coat shall meet or exceed industry standards for weathering, hardness, and resistance to salt spray and humidity. The final color shall be black.

2.3 METAL DECKING SUPPORTS

A. Metal Decking Supports shall be designed, manufactured, and installed in general conformance with the configuration shown on the Drawings.

B. Angle steel bars of galvanized steel shall be provided as supports on two sides of each section of Metal Decking. The angles shall be embedded in concrete and shall include embedment anchors welded to the side in contact with the concrete to provide a positive mechanical bond between the angle and the concrete.

C. Angle bars shall measure 1 ½ by 1 ½ inches and have a minimum thickness of ¼ inch but shall be designed by the Contractor to be sufficient for the required load.

D. Angle bars shall be sized and set such that Metal Decking is flush with the top of concrete portions of the structure.

2.4 METAL DECKING RESTRAINING / LOCKING SYSTEM

A. Metal Decking shall be provided with fasteners from the manufacturer which shall serve to keep the decking tight and in place. The fasteners shall be independent and not require a fixed bolt welded to the angle to be attached. Each fastener shall be entirely removable and replaceable. Sufficient fasteners shall be provided for each grate as per the manufacturer’s recommendation and an equal number of spares shall be provided.

PART 3 – EXECUTION

3.1 SECTION INCLUDES

A. Metal Decking

3.2 METAL DECKING

A. Verify measurements.

B. Fabricate the Metal Decking.

C. Notify Engineer prior to installation.

D. Verify placement of the support angles. Install embedded angles during concrete placement. Install anchored supports after concrete has reached sufficient strength.

E. Install decking and fasteners.

END OF SECTION

SECTION 05 52 13 - PIPE AND TUBE RAILINGS

PART 1- GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Performance Requirements

D. Submittals

E. Quality Assurance

F. Project Conditions

G. Coordination and Scheduling

1.2 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 66 00 – Product Storage and Handling Requirements

D. Section 03 30 00 – Reinforced Cast In-Place Concrete

E. Section 05 30 00 – Metal Decking

1.3 DESCRIPTION

A. The Contractor shall furnish all equipment, materials, and labor and do all Work necessary to fabricate, transport, and install safety railings for the platform associated with the operator for the slide gate at the new dam within the raceway.

B. The railings will be installed on three sides of the slide gate operator platform as shown on the Drawings.

C. The railings shall be sufficient to meet AASHTO loading standards for H-15 vehicle traffic and shall also provide for pedestrian fall protection.

1.4 PERFORMANCE REQUIREMENTS

A. In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:

1. Steel: 72 percent of minimum yield strength.

B. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails:

i. Uniform load of 50 lbf/ ft. applied in any direction.

ii. Concentrated load of 200 lbf applied in any direction.

iii. Uniform and concentrated loads need not be assumed to act concurrently.

2. Top Rails of Guards:

i. Uniform load of 50 lbf/ ft. applied in any direction.

ii. Concentrated load of 200 lbf applied in any direction.

iii. Uniform and concentrated loads need not be assumed to act concurrently.

3. Infill of Guards:

i. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.

ii. Infill load and other loads need not be assumed to act concurrently.

1.5 SUBMITTALS

A. In the Dam Construction Workplan, Contractor shall provide written details on the installation of the safety railing.

B. Ten days prior to the start of fabrication, provide the Engineer the following:

1. Product Data for the grout, anchoring cement, and paint products.

2. Shop Drawings for safety rails including plans, elevations, sections, details, and attachments to other Work.

3. Structural analysis data signed and stamped by a State of Connecticut professional engineer responsible for their preparation

4. Welding certificates.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of railing through one source from a single manufacturer.

B. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 COORDINATION AND SCHEDULING

A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 SECTION INCLUDES

A. Metals, General

B. Steel and Iron

C. Fasteners

D. Miscellaneous Materials

E. Fabrication

F. Finishes, General

G. Steel and Iron Finishes

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.3 STEEL AND IRON

A. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.

B. Plates, Shapes, and Bars: ASTM A 36/A 36M.

C. Castings: Either gray or malleable iron, unless otherwise indicated.

1. Gray Iron: ASTM A 48/A 48M, Class 30, unless another class is indicated or required by structural loads.

2. Malleable Iron: ASTM A 47/A 47M.

2.4 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless-steel or zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5. Select fasteners for type, grade, and class required.

1. Where exposed to weather, in ground contact, pressure-preservative treated wood, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or of Type 304 stainless steel.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated.

2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

B. Shop Primers: Provide primers that comply with Division 9 painting Sections.

C. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat. Use at exterior locations.

1. Products: Subject to compliance with requirements, provide one of the following:

i. Benjamin Moore & Co.; Epoxy Zinc-Rich Primer CM18/19.

ii. PPG Architectural Finishes, Inc.; Aquapon Zinc-Rich Primer 97-670.

iii. Sherwin-Williams Company (The); Corothane I GalvaPac Zinc Primer.d. Tnemec Company, Inc.; Tneme-Zinc 90-97.

D. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.6 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

G. Connections: Fabricate railings with welded connections, unless otherwise indicated.

H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove flux immediately.

4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

I. Form changes in direction as follows:

1. By bending or by inserting prefabricated elbow fittings.

2. By flush bends or by inserting prefabricated flush-elbow fittings.

3. By radius bends of radius indicated or by inserting prefabricated elbow fittings of radius indicated.

J. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

K. Close exposed ends of railing members with prefabricated end fittings.

L. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.

M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.

1. At brackets and fittings fastened to plaster or gypsum board partitions, provide fillers made from crush-resistant material, or other means to transfer wall loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.

2. Provide brackets with 2-1/4-inch clearance from inside face of handrail and finished wall surface and 1-1/2-inch minimum clearance between handrail and bracket.

N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.8 STEEL AND IRON FINISHES

A. For nongalvanized steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors to be embedded in exterior concrete or masonry.

B. Preparation for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic-phosphate process.

C. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed products:

1. Exteriors (SSPC Zone 1B) and Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."

D. Apply shop primer to prepared surfaces of railings, unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 SECTION INCLUDES

A. Installation, General

B. Railing Connections

C. Anchoring Posts

D. Anchoring Railing Ends

E. Attaching Handrails to Walls

F. Adjusting and Cleaning

3.2 INSTALLATION, GENERAL

A. Fit exposed connections together to form tight, hairline joints.

B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.

2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.

3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

C. Adjust railings before anchoring to ensure matching alignment at abutting joints.

D. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or in the field.

3.4 ANCHORING POSTS

A. Anchor posts to metal surfaces with oval flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:

1. For steel pipe railings, weld flanges to post and bolt to metal supporting surfaces.

3.5 ANCHORING RAILING ENDS

A. Anchor railing ends to concrete and masonry with round flanges connected to railing ends and anchored to wall construction with anchors and bolts.

B. Anchor railing ends to metal surfaces with flanges bolted to metal surfaces and welded to railing ends.

3.6 ATTACHING HANDRAILS TO WALLS

A. Attach handrails to wall with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface.

1. Use type of bracket with predrilled hole for exposed bolt anchorage.

B. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.

C. Secure wall brackets to building construction as follows:

1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.

2. For hollow masonry anchorage, use toggle bolts.

3.7 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

END OF SECTION

DIVISION 07
MOISTURE PROTECTION

SECTION 07 10 00 – WEATHER PROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. References and Standards

D. Submittals

1.2 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

D. Section 01 35 43 – Environmental Procedures

E. Section 01 50 00 – Temporary Facilities and Controls

F. Section 01 55 26 – Traffic Control

G. Section 01 57 16 – Temporary Project Controls

H. Section 01 66 00 – Product Storage and Handling Requirements

I. Section 01 74 23 - Final Cleaning

J. Section 02 41 00 – Demolition

K. Section 02 81 00 – Waste Management and Disposal

L. Section 04 05 00 – Repair of Stone Masonry Walls

1.3 DESCRIPTION

A. Contractor shall provide all labor, materials, and equipment to protect the buildings/structures not scheduled for demolition from damage due to weather and vandalism including precipitation, snow or stormwater runoff and unauthorized entry. Work includes, but is not limited to, the following:

1. Seal all exterior wall openings and wall penetrations to render the remaining buildings/structures weather proof and secure from unauthorized entry following the completion of demolition separation activities in accordance with Section 02 41 00 – Demolition and the Drawings. Work includes installation of measures to mitigate the flow of stormwater run-off into the lower levels of the remaining buildings.

2. Repair portions of the roofs of Buildings 1, 3, 4, 6, 9, 11, 12, and Skyway 1 as indicated on the Drawings to render the buildings weather proof. Location and estimated quantities of roof repairs are included in Table 3 – Window, Door and Roof Weather Proofing Inventory.

3. Seal and secure the existing exterior windows and doors on the first two floors of Buildings 1, 3, 4, 6, 9, 11 (basement included), 12, and Skyway 1 facing East Main Street, Brooklyn Street, and Grove Street to protect the windows and doors from weather and vandalism. Location and estimated quantities of windows and doors requiring sealing and securing are included in Table 3 – Window, Door, and Roof Weather Proofing Inventory.

1.4 REFERENCES AND STANDARDS

A. All work performed by Contractor shall be accomplished in accordance with all regulations and laws of local, State, and federal agencies and utility companies.

B. Connecticut State Building Code (International Building Code, 2003 edition)

C. Occupational Safety and Health Administration (OSHA) – Regulation 29 Code of Federal Registrar (CFR) Part 1926 – Occupational Safety and Health.

D. Where reference is made to one of the above standards the revision in effect at the time of the bid opening shall apply.

1.5 SUBMITTALS

A. Contractor shall prepare a building weather proofing section for the Project Work Plan consistent with Section 01 33 00 – Submittal Procedures. This section of the Project Work Plan shall describe means and methods for weather proofing and securing the buildings not scheduled for demolition. At a minimum, the following shall be included in this section of the Project Work Plan:

1. A written description of proposed building weather proofing and securing procedures and methods for installation including a list of all proposed materials and equipment.

2. Cutsheets and/or specifications for all proposed materials used to weather proof and secure the remaining buildings.

3. Health and safety procedures for the weather proofing activities consistent with Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites.

PART 2 MATERIALS

2.1 SECTION INCLUDES

A. Roof Sheathing

B. Wall Sheathing

C. Pressure Treated Plywood

D. Wood Framing

E. Wood Rafters

F. Concrete Block

G. Mortar

H. Hydraulic Cement

I. Ice and Water Shield

J. Hardware

K. Asphalt Shingles

L. Exterior Paint

2.2 ROOF SHEATHING

A. Roof Sheathing used to render roofs water proof shall be ZIP System® manufactured by Huber Engineered Woods, LLC or Engineer approved equivalent.

B. The Zip System® utilized for Roof Sheathing shall be the 1/2-inch brown combo panel.

2.3 WALL SHEATHING

A. Wall Sheathing used to seal openings within the buildings shall be ZIP System® manufactured by Huber Engineered Woods, LLC or Engineer approved equivalent.

B. The Zip System® utilized for Wall Sheathing shall be the 1/2-inch brown combo panel.

2.4 PRESSURE TREATED PLYWOOD

A. Pressure Treated Plywood used to seal and secure windows shall have a minimum nominal thickness of ¾-inch made from Southern Pine.

B. Pressure Treated Plywood treatment shall meet American Wood Protection Association standards.

2.5 WOOD FRAMING

A. Wood Framing shall consist of pressure treated Southern Pine, construction grade lumber with minimum nominal dimensions of 2-inch thick by 4-inch wide.

2.6 WOOD RAFTERS

A. Wood Rafters shall consist of kiln dried Whitewood, construction grade lumber with minimum nominal dimensions of 2-inch thick by 10-inch wide.

2.7 CONCRETE BLOCK

A. Concrete Block shall be hollow load bearing block with a normal weight of 125 pounds per cubic foot and nominal face dimensions of 16-inches long by 8-inches high.

2.8 MORTAR

A. Mortar shall be consistent with the requirements outlined in Section 04 05 00 – Repair of Stone Masonry Walls.

2.9 HYDRAULIC CEMENT

A. Hydraulic cement shall be rapid setting hydraulic patch with a minimum 28 day compressive strength of 5,500 psi.

2.10 ICE AND WATER SHIELD

A. Ice and water shield shall be 40 mil, self-adhering membrane composed of a high strength polyethylene film coated on one side with a layer of rubberized asphalt adhesive and interwound with a disposable release sheet.

B. Ice and water shield shall be GRACE Ice and Water Shield or Engineer approved equivalent.

2.11 HARDWARE

A. All hardware used to weather proof the remaining buildings shall be corrosion resistant and compatible with the material used to weather proof the buildings.

2.12 ASPHALT SHINGLES

A. Asphalt Shingles shall be laminated, multi-ply construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing with wind resistance consistent with ASTM D7158, Class H.

B. Asphalt Shingles shall have an antique black color.

C. Asphalt Shingles shall be 13-1/4 inches by 40-inches in size with an exposure of 5-5/8 inches and a minimum weight of 260 pounds per square.

2.13 EXTERIOR PAINT

A. Exterior paint shall be self-priming, mildew resistant Sherwin Williams Exterior Acrylic Coating or Engineer approved equivalent.

B. Exterior paint shall be of flat sheen and color matched to existing window and door covering paint color.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. General

B. Weather Proofing Openings and Wall Penetrations

C. Weather Proofing/Protecting Windows

D. Weather Proofing Roofs

E. Warranty/Guarantees

3.2 GENERAL

A. All material used to weather proof and secure the remaining buildings shall be delivered to the Site in the original packaging and managed in accordance with Section 01 66 00 – Product Storage and Handling Requirements.

B. Contractor shall be responsible for off-loading all materials.

C. Materials shall not be placed directly on the ground surface and shall be protected from inclement weather and direct sunlight.

D. In accordance with Section 02 82 00 – Asbestos Remediation and Table 1-Confirmed Asbestos-Containing Materials, the Contractor shall remove ACM as needed to complete weather proofing activities.

3.3 WEATHER PROOFING OPENINGS AND WALL PENETRATIONS

A. Contractor shall be responsible for closing/sealing any existing openings or penetrations in exterior building walls created during the performance of the demolition building separation activities in order to mitigate infiltration of moisture and prevent unauthorized access to the interior of the buildings to the satisfaction of the Engineer.

B. Utility penetrations in walls shall be sealed with hydraulic cement or block and mortar dependent upon the size of the penetration as determined by the Contractor.

C. Sealing of openings or wall penetrations below adjacent final grades and up to a height of 6-inches above final grade shall be completely sealed utilizing Concrete Block and Mortar to mitigate stormwater run-off from flowing into the buildings. The above grade portion of the opening or penetration may be finished with block or wood framed as described below.

D. For any at or above grade openings larger than 30-inches in width, the Contractor shall:

1. Frame the opening using wood framing with a maximum spacing of 16-inches center to center between framing studs. Wood Framing shall be anchored into the sidewalls, top, and bottom of the opening.

2. Seal the opening using wall sheathing. Wall sheathing shall be secured to the wood framing.

3. The wall sheathing shall be finished with ice and water shield installed per manufacturer's recommendations.

4. All gaps between framed walls and existing building components shall be sealed with silicone.

E. For any at or above grade opening smaller than 30-inches in width, the Contractor shall:

1. Seal the opening as detailed in Section D above or seal the opening with block and mortar.

3.4 WEATHER PROOFING/PROTECTING WINDOWS

A. Contractor shall seal and secure the existing exterior windows and doors on the first two floors of Buildings 1, 3, 4, 6, 9, 11 (basement included), 12, and Skyway 1 facing East Main Street, Brooklyn Street, and Grove Street to protect the windows and doors from weather and vandalism. Location and estimated quantities of windows and doors requiring sealing and securing are included in Table 3 – Window, Door, and Roof Weather Proofing Inventory.

B. Window and door openings shall be sealed/secured with pressure treated plywood anchored directly to the exterior wall of the building if materials are competent or thru-bolted to wood bracing on the interior of the building.

C. All gaps between the plywood and the exterior walls of the building shall be sealed with silicone.

D. The exterior of the plywood shall be painted with exterior paint color matched to existing painted plywood on the buildings.

3.5 WEATHER PROOFING ROOFS

A. Contractor shall repair portions of the roofs of Buildings 1, 3, 4, 6, 9, 11, 12, and Skyway 1 as indicated on the Drawings to render the buildings weather proof. Location and estimated quantities of roof repairs are included in Table 3 – Window, Door and Roof Weather Proofing Inventory.

B. Contractor shall remove rotted, damaged, or saturated roof sections including underlying wood rafters (if the rafter exhibits moisture damage), sheathing, and roofing material. The resulting roof debris shall be collected, managed, and disposed off site in accordance with Section 02 81 00 - Waste Management and Disposal. Roof sections containing ACM shall be removed in accordance with Section 02 82 00 – Asbestos Remediation.

C. Upon removal, Contractor shall install replacement roof rafters in their entirety or sister new rafter sections to competent rafters to remain in accordance with local and State building codes.

D. Contractor shall install roof sheathing to cover the roof opening. Roof sheathing shall be secured to the rafters.

E. The roof sheathing shall be finished with ice and water shield installed per manufacturer's recommendations.

F. Asphalt Shingles shall be installed over the roof sheathing and ice and water shield in accordance with manufacturer's recommendations.

G. Repair of roof penetrations within Building 6 shall be completed by wood framing over openings. Wood framing shall be in accordance with local and State building codes. Wood framing shall be finished with roof sheathing covered by ice and water shield installed to manufacturer's recommendations. New roofing installed over penetrations shall be flashed to the existing roof.

H. Repair of damaged asphalt roofing on Building 6 shall be completed through the application of non-asbestos asphaltic roof cement. Prior to placement area shall be cleared of loose debris.

3.6 WARRANTY/GUARANTEES

A. Contractor shall warranty/guarantee that his/her weather proofing activities are free of leaks or deficiencies for a period of 1 year after final completion of the Work.

B. In the event that the Contractor's weather proofing work is determined to be defective or deficient within the 1 year warranty/guarantee period, Contactor shall repair the defect/deficiency at no additional cost to the Owner.

END OF SECTION

DIVISION 31
EARTHWORK

SECTION 31 00 00 – EARTHWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. References and Standards

D. Quality Assurance

E. Line and Grade Control

F. Submittals

G. Job Conditions

H. Coordination

I. Subsurface Soil Data

1.2 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 35 43 - Environmental Procedures

D. Section 01 35 43.13 - Environmental Procedures for Hazardous Materials

E. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

F. Section 01 50 00 - Temporary Facilities and Controls

G. Section 01 50 10 – Temporary Water Control

H. Section 01 55 26 - Traffic Control

I. Section 01 57 13 - Temporary Erosion and Sediment Control

J. Section 01 57 16 - Temporary Project Controls

K. Section 01 74 23 - Final Cleaning

L. Section 02 41 00 – Demolition

M. Section 02 81 00 – Waste Management and Disposal

N. Section 02 82 00 - Asbestos Remediation

O. Section 02 84 00 - Hazardous Material Remediation

P. Section 03 30 00 – Reinforced Cast In Place Concrete

Q. Section 31 05 13 – Soils and Aggregate for Earthwork

R. Section 31 37 00 - Stone and Riprap

S. Section 31 52 00 – Temporary Cofferdams

T. Section 32 90 00 – Landscaped Work

1.3 DESCRIPTION

A. This Section specifies requirements for the earthwork activities necessary to complete the Work.

B. Contractor shall examine all Drawings and all other Sections of the Specifications for requirements therein affecting the Work of this Section. Information related to subsurface conditions is provided in the technical reports outlined in Article 21 of Section 00 73 00 – Supplemental Conditions. Electronic copies of these reports are available for viewing and/or for download at http://www.vernon-ct.gov/legal-notices, RFP#1060. Copies of these technical reports are also available from Minuteman Press located at 352 Hartford Turnpike, Vernon, Connecticut for a non-refundable fee consistent with Minuteman Press reproduction pricing.

C. Contractor shall be responsible for performing all appropriate subsurface utility mark outs prior to performing any intrusive Work and shall provide sufficient notification to Call Before You Dig (CBYD) as required by Connecticut state law. Contractor shall provide the CBYD notification number to the Engineer along with documentation of clearance at least 5 days prior to the performance of any intrusive activities.

D. The Work shall be carried out in such manner as to prevent undermining or disturbing any existing utilities, poles, catch basins, culverts, buildings, fences, or other structures at or adjacent to the Site (unless otherwise scheduled to be removed and/or replaced as part of the Work). Contractor shall be responsible for the repair of any damage to existing utilities, structures, or other features as a result of his/her operations to the satisfaction of the Engineer at no additional cost to Owner.

E. Excavations shall be made in such manner and to such a width as required to give suitable room for laying and jointing piping in the case of trenching/utility work or

for construction of structures and removal of structures and impacted or deleterious materials as necessary to complete the Work, and as further shown on the Drawings.

F. All excavation work shall comply with the requirements of OSHA excavation safety standards (29 CFR Part 1926.650 Subpart P) and all other applicable federal, State or local requirements. Where conflict between OSHA and State regulations exists, the more stringent requirements shall apply.

G. Work may encounter subsurface contamination as described in Section 01 11 00 – Summary of Work. Work shall be performed in accordance with Section 01 35 29 - Health, Safety and Emergency Response Procedures for Contaminated Sites and Section 01 35 43 – Environmental Procedures.

H. Erosion and sedimentation controls shall be installed and maintained as specified in Section 01 57 13 – Temporary Erosion and Sediment Controls and as shown on the Drawings prior to initiation of any earthwork activities.

I. Dust and odor suppression, noise and vibration control, and all monitoring shall be performed by Contractor as required in accordance with Section 01 35 29 – Health, Safety and Emergency Response Procedures for Contaminated Sites, Section 01 35 43 – Environmental Procedures, and Section 01 57 16 – Temporary Project Controls.

J. Water control measures shall be implemented during all Work associated with the raceway including removal of the raceway cap/cover, removal of the existing dam, construction of the new dam, repointing/repairing of the raceway walls, and placement of riprap consistent with Section 01 50 10 – Temporary Water Controls.

K. Contractor shall be responsible for the handling, management, temporary stockpiling, loading, transportation, and off site disposal/recycling at Owner-approved facilities of Unsuitable Site Materials, as well as all other excess building materials and debris in accordance with Section 02 81 00 – Waste Management and Disposal.

L. Contractor shall be responsible for the removal, off site disposal, and replacement of any non-impacted material (soil and groundwater) that becomes impacted with contaminants as a result of Contractor's mismanagement (tracking) or Work procedures at no additional cost to Owner.

M. Contractor shall furnish all labor, equipment, materials, tools, supervision, and transportation necessary to perform all earthwork necessary to complete the Work consistent with this Section and as shown on the Drawings. These earthwork activities include, but are not limited to, the following:

1. Excavation of Suitable and Unsuitable Site Materials to remove concrete foundations to a minimum of 18-inches below ground surface, remove concrete slabs, cap and/or terminate utilities, demolish/remove other features and achieve the grades indicated on the Drawings.

2. Management of all excavated materials consistent with Section 02 81 00 – Waste Management and Disposal.

3. Re-use and backfill of excavations, depressions, pits, trenches, sumps, and basements with Suitable Site Materials to the maximum extent practical as directed by the Engineer to the lines and grades indicated on the Drawings. The Engineer may elect to alter the final grades depicted on the Drawings to maximize the re-use of Suitable Site Materials and minimize off-Site disposal and the amount of imported fill. The Engineer shall approve the import fill prior to delivery to the Site.

4. Backfill with imported materials to supplement Suitable Site Materials as directed by the Engineer.

5. All other earthwork activities necessary to perform the Work.

N. Contractor shall perform all Work necessary to support earthwork and other Site activities, including but not limited to the following:

1. Limited clearing and removal of trees and vegetation within the Limits of Work as necessary to complete the Work.

2. Saw cutting and removal of asphalt and concrete surfaces as shown on the Drawings.

3. Protection and preservation of all existing fencing, buildings, pavements, wells, utilities, and miscellaneous Site features not scheduled for demolition or removal.

4. Obtaining all required permits, licenses, and approvals of appropriate municipal and utility authorities, prior to commencing the work of this Section. The Owner will obtain the permits related to the removal of the raceway cover and existing dam and construction of the new dam system. These permits include a Connecticut Department of Energy and Environmental Protection (DEEP) Inland Water Resources Division (IWRD) Dam Construction Permit (DEEP-IWRD-APP-103) and a United States Army Corps of Engineers Category 1 Certification Form. Drafts of these permit applications are included in Attachment I for reference. These permit approvals will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within these permits. The Owner will obtain an Agent Issued Permit from the local Inland Wetlands Commission for the Work in the upland portions of the Site. This permit will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within this permit.

5. Providing products in sufficient quantities to meet the project requirements, and maintaining reasonable availability as necessary to eliminate construction delays.

6. Dust and sediment control and maintenance of the Site and adjacent streets and sidewalks in a clean and unencumbered state as described in these Specifications.

7. Subgrade preparation and placement of backfill to grades shown on the Drawings, and as further specified herein.

8. Contractor is responsible for off site disposal of Suitable Site Materials that are made unsuitable for re-use due to Contractor's mismanagement at no additional cost to the Owner.

9. Control and management of stormwater flows and run-off as required to complete the Work. It is the intent of these Specifications to limit the flow of stormwater run-off into open excavations or Work areas.

10. Earthwork associated with Site restoration, including but not limited to, final grading prior to placement of topsoil and landscaped areas.

11. Repair/replacement of asphalt paved surfaces not scheduled for demolition/removal that are damaged as a result of the Contractor's activities at no additional cost to the Owner.

1.4 REFERENCES AND STANDARDS

A. All work performed by Contractor shall be accomplished in accordance with all regulations and laws of local, State, and Federal agencies and utility companies.

B. Latest version of the American Society for Testing and Materials (ASTM) standards:

1. ASTM D422 – Standard Test Method for Particle-Size Analysis of Soils.

2. ASTM 698 – Test for Moisture - Density Relations of Soils – Standard Proctor Method.

3. ASTM D1557 – Test for Moisture - Density Relations of Soils Using 10 lb Hammer and 18-inch Drop (Modified Proctor).

4. ASTM D2216 – Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil.

5. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes.

6. ASTM D2922 – Test for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

7. ASTM D3017 – Test for Water Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

8. ASTM D4318 – Test for Plastic Limit, Liquid Limit, and Plasticity Index of Soils.

C. Latest version of the American Association of State Highway and Transportation Officials (AASHTO) standards:

1. AASHTO T88 – Particle Size Analysis of Soils.

2. AASHTO T180 – Standard Specification for Moisture-Density Relations of Soils Using a 10 lb. Hammer and 18-inch Drop.

3. AASHTO T 215 – Standard Method of Test for Permeability of Granular Soils (Constant Head).

D. Connecticut Department of Transportation (CTDOT) Specifications for Roads, Bridges, and Incidental Construction Form 816 (Latest Edition).

E. Connecticut State Building Code (International Building Code, 2003 edition)

F. Connecticut DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

G. Connecticut DEEP's Guidelines for Soil Erosion and Sediment Control dated 2002.

H. Connecticut DEEP's Stormwater Quality Manual dated 2004.

I. Occupational Safety and Health Administration (OSHA) – Regulation 29 Code of Federal Registrar (CFR) Part 1926 – Occupational Safety and Health.

J. OSHA Regulations Part 29 CFR 1926.651 and 1926.652 for trench and excavation safety.

K. Where reference is made to one of the above standards the revision in effect at the time of the bid opening shall apply.

1.5 QUALITY ASSURANCE

A. Engineer will perform certain testing and inspections in the field to check compliance of the Work and materials with the Specifications. In the event these tests or inspections indicate non-compliance, Contractor shall be responsible for correcting, repairing, or replacing the deficiency at no additional cost to Owner.

B. Contractor shall inspect all materials prior to installation. Any materials that are defective, deteriorated, damaged or inconsistent with these Specifications or Drawings shall be replaced by Contractor at no additional cost to Owner.

C. Contractor shall not place any fill or prepare any subgrades unless Engineer is present. Contractor shall keep Engineer informed of the project schedule and planned activities to avoid potential delays in the Work. Any delays caused by Contractor's failure to communicate with Engineer shall be the sole responsibility of Contractor.

D. Engineer may perform in-place field density testing consistent with ASTM D2922 and 3017. If test results indicate density not in compliance with this Section, the materials shall be re-compacted by Contractor until the design density is achieved at no additional cost to Owner.

E. Contractor shall perform the required Work in compliance with applicable requirements of governing authorities having jurisdiction.

F. Contractor is responsible for conducting chemical and geotechnical laboratory quality control testing during the construction according to the requirements outlined in Section 35 05 13 – Soils and Aggregates for Earthwork.

G. Neither the presence of Engineer, nor any observations and testing performed by Engineer, nor any notice of failure to give notice shall excuse Contractor from defects discovered in his/her work.

1.6 LINE AND GRADE CONTROL

A. Contractor shall be responsible for establishing and maintaining line and grade control for all aspects of the Work and as specified on the Drawings. All survey work conducted on the project shall correspond to the Site coordinate system and vertical datum as shown on the Drawings.

B. Tolerances for subgrade and final grades shall be as follows:

1. Horizontal tolerance: to the nearest 0.1 feet

2. Vertical tolerance: to the nearest 0.1 feet

C. Engineer may perform spot survey checks of finish grades to verify the design grades have been established. Any data conflicts shall be addressed and corrected by Contractor at no additional cost to Owner.

1.7 SUBMITTALS

A. Contractor shall prepare an excavation and backfill section for the Project Work Plan consistent with Section 01 33 00 – Submittal Procedures. This section of the Project Work Plan shall describe means and methods, sequencing, duration,

materials, equipment and labor required to complete all earthwork activities associated with the Work. At a minimum, the following shall be included in this section of the Project Work Plan:

1. A Drawing showing all planned material stockpile and staging areas.

2. A description of materials and methods for protecting open excavation areas during working and non-working hours, including temporary barriers, road plates, flashing warning lights, and trespasser ingress prevention methods.

3. Identification of noise and vibration generating activities associated with earthwork with a description of monitoring and mitigation measures that will be implemented, consistent with the requirements of Section 01 57 16 – Temporary Project Controls.

4. Description of planned temporary earth support systems (as necessary).

5. Description of all backfill placement procedures, including but not limited to, placement methods, lift thicknesses, and compaction means and methods for all backfill work.

B. Product Data: Provide manufacturer product data submittals describing all materials specified in Part 2 of this Section to Engineer at least 14 days prior to performing that phase of the Work and consistent with Section 01 33 00 – Submittal Procedures.

1.8 JOB CONDITIONS

A. Coordinate Work with that of other trades affecting or affected by Work of this Section and cooperate with such trades to assure the steady progress of the Work.

B. Visit the Site to review all details of the Work and working conditions and to verify dimensions in the field including headroom and interferences from adjacent structures and utilities. Notify Engineer in writing of any discrepancy before performing any Work.

C. Consult official records of existing utilities, both surface and subsurface, and their connection, to be fully informed on all existing conditions and limitations as they apply to this Work and its relation to other Work.

D. Field-locate and protect existing underground and overhead utilities to remain within the Limits of Work in accordance with the requirements of authorities having jurisdiction. If utilities are to remain in place, provide adequate means of protection during earthwork and construction operations including all coordination and costs associated with temporary support, disconnection, or re-routing of utilities. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult Engineer immediately for direction. Cooperate with Engineer in keeping services and facilities in operation. Repair damaged utilities to satisfaction

of the Engineer. Do not interrupt existing utilities serving facilities occupied and used by others.

E. Field-locate and protect existing monitoring wells to remain in place as identified on the Drawings.

F. Protection of persons and property: Barricade open excavations as part of the Work and post with warning signs and lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, dust, washout and other hazards created by earthwork operations.

1.9 COORDINATION

A. Contractor shall be responsible for notifying Engineer at least 72 hours prior to the start of earthwork operations requiring observation and/or testing.

1.10 SUBSURFACE SOIL DATA

A. Contractor shall be aware of all relevant Site conditions, including subsurface geology, groundwater elevations, and soil, sediment and groundwater environmental chemistry data. Information related to subsurface conditions is provided in the technical reports outlined in Article 21 of Section 00 73 00 – Supplemental Conditions. Electronic copies of these reports are available for viewing and/or for download at http://www.vernon-ct.gov/legal-notices, RFP#1060. Copies of these technical reports are also available from Minuteman Press located at 352 Hartford Turnpike, Vernon, Connecticut for a non-refundable fee consistent with Minuteman Press reproduction pricing.

B. The available subsurface data is for general information and are accurate only at the particular locations and times the subsurface explorations were made. It is Contractor's responsibility to make interpretations and to draw conclusions based on the character of materials to be encountered and the impact to his work based on his expert knowledge of the area and of earthwork techniques. The actual conditions are expected to vary substantially in some areas. Other interpretations of the subsurface data provided in the Specifications are possible.

C. After obtaining Owner's permission, Contractor shall take whatever additional subsurface explorations he deems necessary at no expense to Owner.

PART 2 MATERIALS

2.1 SECTION INCLUDES

A. General

B. Site Materials

C. Geotextile Filter Fabric

2.2 GENERAL

A. Soils and Aggregates: Refer to Section 31 05 13 – Soils and Aggregate for Earthwork and Section 31 37 00 – Stone and Riprap for materials and testing requirements.

2.3 SITE MATERIALS

A. Suitable Site Materials: Suitable Site Materials consist of either:

1. Materials generated during excavation and grading to achieve elevations specified on the Drawings or during demolition activities that are deemed acceptable for re-use as on-Site fill by the Engineer; and/or,

2. Coated and uncoated brick, concrete, and masonry materials that are crushed on-Site to 3-inch minus and deemed acceptable for re-use as on-Site fill by the Engineer.

3. Refer to Section 31 15 13 – Soils and Aggregate for Earthwork for a full definition of Suitable Site Materials.

B. Unsuitable Site Materials: Unsuitable Site Materials consist of materials generated from on-Site sources that are classified by the Engineer either as not meeting the requirements of Suitable Site Materials as specified herein, or are visually and olfactory impacted. Unsuitable Site Materials include organic soils, saturated soils/sediments, subsoil, trash, frozen soil, ice or snow, stumps, debris, existing asphalt pavement, and material determined to be impacted. Identification of Unsuitable Site Materials will be at the sole discretion of Engineer. Unsuitable Site Materials shall be managed, handled, temporarily stockpiled, loaded, transported and disposed of off-Site in accordance with Section 02 81 00 – Waste Management.

2.4 GEOTEXTILE FILTER FABRIC

A. Geotextile Filter Fabric shall be polypropylene, needle punched, non-woven geotextile manufactured from continuous filaments, or Engineer-approved equal, and having properties that comply with the required property values listed in Table 1.

TABLE 1 - GEOTEXTILE FILTER FABRIC PROPERTY VALUE REQUIREMENTS

PROPERTIES	TEST METHOD	UNITS	QUALIFIER	SPECIFIED VALUE
Apparent Opening Size	ASTM D4751	MM	MARV	0.21
Permittivity	ASTM D4491	Sec-1	MARV	1.7
CBR Puncture Strength	ASTM D6241	lbs	MARV	310
Grab Tensile Strength	ASTM D4632	lbs	MARV	120

B. Geotextile Filter Fabric Manufacturer and/or Fabricator shall furnish materials whose "Minimum Average Roll Values" (MARV) meet or exceed the properties specified above, as well as a certification that the material properties meet or exceed the specified values. Geotextile Filter Fabric shall be stock products. Geotextile Filter Fabric Manufacturer and/or Fabricator shall not furnish products specifically manufactured to meet the specifications of this project unless authorized by Engineer.

C. Approved geotextile is Mirafi® 140N.

PART 3 - EXECUTION

3.1 SECTION INCLUDES

A. Excavation

B. Backfilling

C. Placement and Compaction

D. Compaction Requirements

E. Grading

F. Field Quality Control

G. Maintenance

3.2 EXCAVATION

A. GENERAL

1. Excavation includes clearing, grubbing and off-Site disposal of all trees, stumps, and vegetation necessary to perform the Work.

2. Perform all excavation necessary to complete the work shown on the Drawings. Any unauthorized excavation shall be properly backfilled and compacted consistent with this Section and associated disposal cost for such

excavated material shall be paid by Contractor at no additional cost to Owner.

3. Excavate to the minimum depths required to terminate, cap, or abandon utility systems necessary to complete the demolition work.

4. Excavate to the minimum depths required to construct the new dam within the raceway as shown on the Drawings.

5. Contractor shall limit the extent of open excavation areas within the work limits and must at a minimum protect excavation areas left open during working and non-working hours with barricades equipped with flashing warning lights.

6. Where soil has been softened or eroded by flooding, freeze/thaw, equipment traffic or placement prior to or during unfavorable weather, it shall be removed and replaced with suitable material as described herein at no cost to Owner.

7. Contractor shall perform the Work in a manner to maintain the stability of structures and utilities adjacent to the Work, insofar as structures or utilities may be jeopardized by excavation or associated Contractor operations. Contractor shall repair damage resulting from excavation or other construction activities in support of the Work to the original condition prior to damage, and repair to a condition approved by Engineer. Owner shall bear no costs associated with damage to, and subsequent repair of, such structures and utilities.

8. Contractor shall construct temporary slopes and/or provide excavation support to protect all excavated areas, as required for safety or compliance with OSHA requirements at no additional cost to Owner.

9. Contractor shall not over excavate below proposed design grades for the purpose of obtaining borrow for use off-Site.

10. Excavated materials shall be segregated based on observed impact as directed by Engineer. All excess material handling, management, and temporary stockpiling shall be performed consistent with the requirements of this Section, Section 02 41 00 – Demolition, and Section 02 81 00 – Waste Management and Disposal.

B. SUBGRADE PREPARATION AND PROTECTION

1. In areas to be filled, the land shall be cleared of vegetation and grubbed and existing asphalt shall be removed.

2. In areas to be filled, existing concrete surfaces shall be perforated to the satisfaction of the Engineer to promote infiltration.

3. Prior to fill placement, the subgrade shall be compact, dry, stable, and free from debris, organic material, ice, and snow.

4. The Site shall be properly graded to limit surface water from entering the work areas or ponding on the exposed soil subgrade. The exposed soil subgrade may be sensitive to disturbance and strength degradation in the presence of excess moisture. Construction traffic over the exposed soil subgrade shall be limited to the extent practical. The subgrade should also be considered frost susceptible.

5. Above the groundwater table, excavations and backfilling shall be conducted in the dry.

6. Below the groundwater table, Contractor shall perform dewatering as necessary to perform the Work in dry and stable conditions.

7. Contractor shall excavate in such a manner as to minimize disturbance of the underlying natural ground. Deterioration of the subgrade between excavation and initial fill placement shall be the responsibility of Contractor and shall be repaired at Contractor's expense.

8. The subgrade shall be observed by Engineer prior to fill placement. Sufficient time must be given to Engineer observe and perform any necessary tests on the subgrade.

C. SLOPE STABILITY

1. Slope sides of manned excavations shall comply with OSHA requirements and local codes and ordinances having jurisdiction.

2. Shore and brace where sloping is not possible either because of space restrictions or stability of material excavated.

3. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

D. SHORING AND BRACING

1. Provide any other shoring and bracing necessary to comply with OSHA requirements and local codes and authorities having jurisdiction.

2. Coordinate shoring and bracing with the demolition to be performed.

3. Maintain shoring and bracing in excavations during all time periods when excavations are to be open. Extend shoring and bracing downward as excavation progresses.

4. All shoring and bracing shall be designed, sealed, and stamped by a Professional Engineer registered in the State of Connecticut. The design and plans will be reviewed for the general concept and arrangement with the understanding that it is Contractor's submission of his proposed design and method to construct the Work as specified in the Contract Documents and that Contractor is responsible for the safety and successful design and construction of the work and compliance with all requirements of the Contract Documents.

E. DEWATERING

1. To the maximum extent practical, prevent surface water from flowing into excavations and from flooding project Site and surrounding area.

2. To the extent practical, do not allow surface water to accumulate in excavations.

3. Dewater excavations to allow Work to be performed in dry conditions as necessary.

F. EXCAVATION FOR STRUCTURES

1. Conform to elevations and dimensions shown and extending a sufficient distance from foundations to permit placing and removal of concrete formwork, other construction, and inspection.

G. DISTURBED SUBGRADE

1. Should the subgrade become disturbed, saturated, or weave, Contractor shall take whatever means necessary to stabilize the subgrade at the discretion of the Engineer at no additional cost to Owner.

H. MATERIAL STOCKPILING AND HANDLING

1. All material including those originating from the Site and imported materials shall be managed and controlled in accordance with Section 01 35 43 – Environmental Procedures, Section 02 41 00 – Demolition, and Section 02 81 00 – Waste Management and Disposal.

2. It is the intent of these Specifications to reuse Suitable Site Materials to the maximum extent practical to limit the off-Site disposal of excess materials.

3. Unsuitable Site Materials as classified by Engineer shall not be used as fill to achieve elevations shown on the Drawings and shall be managed, temporarily stockpiled, loaded, transported and disposed off-Site at an Owner approved facility as described in Section 02 81 00 – Waste Management and Disposal.

4. Suitable Site Materials as directed by the Engineer shall be used to achieve elevations shown on the Drawings. Excess Suitable Site Materials shall be managed, temporarily stockpiled, loaded, transported and disposed off-site at an Owner approved facility as described in Section 02 81 00 – Waste Management and Disposal.

5. Contractor shall be responsible for the management, loading, transportation, and off site disposal, at no additional cost to Owner, of any Suitable Site Materials that are re-classified as Unsuitable Site Materials due to Contractor's management procedures.

6. Maintain, clean, and repair staging areas consistent with Section 01 35 43 – Environmental Procedures and Section 02 81 00 – Waste Management and Disposal.

7. Individual stockpile sizes for all materials temporarily stored on-Site shall not exceed 500 cubic yards unless approved by Engineer.

8. Contractor shall conduct the transfer of materials to the stockpile areas in such a manner as to prevent loss of or spread of contaminated materials across the Site. Any contamination caused by the Contractor's management of materials shall be cleaned up consistent with all applicable laws and regulations at no additional expense to the Owner.

9. Contractor shall be responsible for all construction, protection, movement and maintenance of stockpiles for the duration of the project Work or until directed otherwise by the Engineer.

I. COLD-WEATHER PROTECTION

1. Protect excavation bottoms and subgrades to be paved against freezing when atmospheric temperature is less than 32 degrees F.

3.3 BACKFILLING

A. GENERAL

1. Unless otherwise specified herein, place acceptable backfill materials in 12 inch, or less, lift thicknesses when compacted by a vibratory roller or 6-inch lift thicknesses when compacted by a plate compactor to the required subgrade elevations and compact each layer to the required degree of compaction.

2. Backfill shall not be placed over a subgrade covered with standing water or that is frozen unless approved by Engineer. If there is standing water on the subgrade, the water shall be removed from the surface and any soft and yielding soil shall be removed or allowed to dry prior to backfill placement.

If the subgrade is frozen it shall be thawed and re-compacted prior to placement of backfill.

3. Engineer may alter the grades depicted on the Drawings to minimize the amount of imported fill. Engineer shall approve the import of materials prior to delivery to the Site.

B. BACKFILL OPERATION

1. Backfill excavations promptly, but not until completion of the following:

a. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.

b. Removal of trash and debris.

3.4 PLACEMENT AND COMPACTION

A. GENERAL

1. Each lift shall be systemically compacted by approved compaction equipment to the density specified herein.

2. The work area shall be graded, shaped and otherwise drained in such a manner as to minimize soil erosion, siltation of drainage channels, damage to existing vegetation and damage to property and waterways outside the Limits of Work.

3. Compaction equipment in open areas shall consist of a vibratory roller having a minimum drum weight of 10,000 pounds and a dynamic force of at least 20,000 pounds, unless otherwise approved by the Engineer.

4. Compaction equipment in confined areas (in trenches and adjacent to walls) shall be accomplished by hand-operated vibratory equipment with either a heavy plate compactor with 800 pound minimum force, or a double drum walk behind compactor with 1,000 pound minimum force, unless otherwise approved by the Engineer.

5. Contractor shall use mechanical equipment designed specifically for compaction. Engineer reserves the right to disapprove any device of inadequate capacity or, in his opinion of a type unsuited to the character of material being compacted.

6. Prior to the end of the each Work shift, a layer of fill shall not be left uncompacted. Prior to terminating operations for the day, the final layer of fill shall be compacted with a smooth-drum roller to the required degree of compaction.

7. Contractor shall not place a layer of compacted fill on snow, ice or frozen soil. Removal of these unsatisfactory materials will be required as directed by the Engineer at no additional cost to Owner.

B. BACKFILL BELOW WATER

1. In excavations that extend below the groundwater table, a layer of Geotextile Filter Fabric shall be installed in the base of the excavation followed by the placement of ¾-inch Crushed Stone wrapped in Geotextile Fabric. The top surface of the ¾-inch Crushed Stone shall be compacted with a minimum of 10 passes of hand-operated vibratory compaction equipment approved by Engineer.

3.5 COMPACTION REQUIREMENTS

A. GENERAL

1. Backfill shall be compacted to the densities specified herein. Density is specified herein as a percentage of the maximum dry density achieved for a granular material when compacted as specified by ASTM D-1557, (Modified Proctor Test).

2. The density of stone aggregates shall not require measurement.

B. COMPACTION DENSITY REQUIREMENTS

1. Suitable Site Materials and Free Draining Materials: Compact to 92% of the maximum dry density.

2. All backfill materials placed on the sides of and within 12 inches above utilities shall be compacted to 92% maximum dry density. The remainder of the backfill above utilities shall also be compacted to 92% maximum dry density, except bituminous concrete base courses, which shall be compacted to 95% maximum dry density.

C. MOISTURE CONTROL

1. Where subgrade soil material must be moisture-conditioned before compaction, uniformly apply water to the surface as needed to obtain required compaction.

2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to the specified density.

3.6 GRADING

A. GENERAL

1. Uniformly grade areas within limits of grading, including adjacent transition areas. Smooth finish surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

B. COMPACTION

1. After grading, compact subgrade to the depth and density required, consistent with these Specifications.

3.7 FIELD QUALITY CONTROL

A. Quality control testing in the field during construction will be provided by Engineer. Contractor shall notify Engineer 72 hours prior to any fill, backfill, or compaction operations. Emailed notification followed by confirmation of notification is satisfactory.

1. Contractor shall permit Engineer to observe all subgrades for each layer of fill or backfill. Additional fill or backfill shall not be placed unless Engineer has approved the subgrade and/or previous layer of fill.

2. When required or requested by Engineer, Contractor shall provide field elevations of the compacted subgrade or fill layer.

B. At the Contractor's expense correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

C. Additional Tests: Additional testing, when test results indicate that the requirements specified herein have not been met, may be performed by Engineer at Contractor's expense.

D. Contractor is responsible for conducting chemical and geotechnical laboratory quality control testing during construction according to the requirements outlined in Section 31 05 13 – Soils and Aggregates for Earthwork and Section 31 37 00 – Stone and Riprap.

3.8 MAINTENANCE

A. PROTECTION OF GRADED AREAS

1. Protect newly graded areas from erosion, and keep free of trash and debris.

2. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

B. RECONDITIONING COMPACTED AREAS

1. Where previously compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

END OF SECTION

SECTION 31 05 13 – SOILS AND AGGREGATES FOR EARTHWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Compliance with Testing and Materials Standards

D. Submittals

1.2 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 66 00 – Product Storage and Handling Requirements

D. Section 03 30 00 – Reinforced Cast In Place Concrete

E. Section 31 00 00 – Earthwork

F. Section 31 37 00 – Stone and Riprap

G. Section 32 90 00 – Landscaped Work

1.3 DESCRIPTION

A. This Section includes descriptions of all soils and aggregate necessary to complete the Work outlined within the Specifications and Drawings.

B. Materials specified herein shall meet the excavation, backfilling, and compaction requirements within Section 31 00 00 – Earthwork.

C. Contractor shall furnish all labor, materials, tools, supervision, and transportation necessary to perform soil and aggregate testing and analysis to meet the testing requirements specified herein.

D. The final approval of a source for all material will be at the discretion of Engineer. Engineer will be responsible for the approval or rejection of the suitability of all soil and aggregate materials furnished by the Contractor.

E. Imported soils must be free of chemical contamination and obtained from a source approved by the Engineer. Imported material shall be sampled and tested by the Contractor, and approved by the Engineer prior to delivery to the Site. Any

change in source or material composition during the Work requires prior approval of the Engineer.

1.4 COMPLIANCE WITH TESTING AND MATERIALS STANDARDS

A. Comply with applicable provisions and recommendations of the latest version of the American Society for Testing and Materials (ASTM) standards:

1. ASTM C136 – Standard Test Methods for Particle Size Analysis of Nature and Man-Made Riprap materials

2. ASTM D422 - Standard Test Method for Particle-Size Analysis of Soils

3. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes

4. ASTM D2216 - Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

5. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)

B. Comply with applicable provisions and recommendations of the latest version of the American Association of State Highway and Transportation Officials (AASHTO) standards:

1. AASHTO T88 – Particle Size Analysis of Soils.

2. AASHTO T180 – Standard Specification for Moisture-Density Relations of Soils Using a 10 lb Hammer and 18-inch Drop.

3. AASHTO T 215 – Standard Method of Test for Permeability of Granular Soils (Constant Head).

C. Connecticut Department of Transportation (CTDOT) Specifications for Roads, Bridges, and Incidental Construction Form 816 (Latest Edition).

D. Connecticut Department of Energy and Environmental Protection (DEEP) Remediation Standard Regulations, Amended June 2013.

E. Where reference is made to one of the above standards, the revision in effect at the time of the bid opening shall apply.

1.5 SUBMITTALS

A. Contractor shall perform chemical and physical properties testing as specified herein, and shall submit results confirming that the proposed materials meet the specified requirements, at least 14 days prior to delivery to the Site. Use of

materials by Contractor prior to testing and approval or rejection shall be at Contractor's risk and at no additional cost to the Owner.

B. For each material, specified in Part 2 of this Section, the Contractor shall submit the following prior to delivery of any materials to the Site:

1. The proposed material source or sources, including name, address, and contact information.

2. Certification letter from the borrow source owner and/or operator that the borrow material does not contain oil or hazardous material, as supported by test data to be provided with certification letter.

3. The results of testing as specified in Part 3 herein for all materials proposed from each source.

4. A 5-lb sample for inspection by the Engineer.

C. All analytical testing results shall be below Connecticut's Department of Energy and Environmental Protection's (DEEP) Residential Direct Exposure Criteria (RDEC) and GA Pollutant Mobility Criteria (GA-PMC) except PCBs, pesticides, and chlorinated volatile organic compounds. PCBs, pesticides, and chlorinated volatile organic compounds shall not be present at concentrations above the laboratory's reporting limit. At a minimum, the reporting limits shall be the lower of the RDEC or the GA-PMC. All testing shall be performed by a State of Connecticut Department of Public Health certified laboratory. Materials brought on-Site by Contractor that do not meet these criteria will not be accepted and shall be legally disposed off site by Contractor at no cost to Owner. Any on-Site materials or Work adversely impacted by the presence of contaminated borrow materials shall be removed, replaced or repaired by Contractor at no cost to the Owner.

1. The testing suite shall consist of the following:

a. Volatile organic compounds SW-846 Method 8260B;

b. Semi-volatile organic compounds SW-846 Method 8270C;

c. Extractable Total Petroleum Hydrocarbons (ETPH);

d. Pesticides and PCBs SW-846 Method 8081A and 8082; and,

e. Priority Pollutant Metals 13 (Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc) and Barium SW-846 Method 6010B and Methods 7470/7471.

2. For each type of soil material in Part 2 herein, results from one suite of the above tests with reporting limits equal to or less than the RDEC or GA-

PMC (whichever is lower) shall be submitted at least 14 days prior to delivery to the Site, and thereafter for each 500 cubic yards of material imported to the Site.

3. All material testing shall be performed by an Owner approved independent laboratory consistent with the requirements of this Section.

D. Contractor shall document total amount and type of material imported to the Site. All import quantities shall be based on material weight slips.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Use of Materials

B. Materials

2.2 USE OF MATERIALS

A. The following summarizes a list of materials to be used during the Work.

1. Free Draining Materials

   a. Locations of placement include, but are not limited to, backfill for pits, trenches, vaults, basements, and excavations and as fill to achieve the grades depicted on the Drawings as approved by the Engineer.

2. 1.5-Inch Stone

   a. Location of placement includes the stabilized construction entrance.

3. Topsoil

   a. Locations of placement includes areas to be stabilized with vegetation created to achieve the grades depicted on the Drawings.

4. Processed Gravel

   a. Location of placement include beneath and adjacent to asphalt curbing.

5. Low Permeability Fill

   a. Downstream of the Ogee spillway.

6. Select Sand Fill

a. Within sand bags for temporary water control measures.

7. Suitable Site Materials

a. Locations of placement include, but are not limited to, backfill for pits, trenches, vaults, basements, and excavations and as fill to achieve the grades depicted on the Drawings as approved by the Engineer.

8. Unsuitable Site Materials shall not be re-used on-Site as backfill.

2.3 MATERIALS

A. Free Draining Materials

1. Free Draining Materials shall be free of debris and organic materials and shall consist of sand, gravel, rock fragments, quarry run stone, broken stone or mixtures. Free Draining Material shall not have more than 70% passing the #40 mesh sieve and no more than 10% passing the #200 mesh sieve.

2. Free Draining Materials shall be consistent with M.02.07 of the CTDOT Standard Specifications for Roads, Bridges and Incidental Construction except Free Draining Materials shall not contain any reclaimed miscellaneous aggregate or asphalt cement.

B. 1.5-INCH CRUSHED STONE

1. 1.5-Inch Crushed Stone shall be sound, tough, durable particles of crushed and uncrushed gravel free from thin elongated pieces and free if any reclaimed miscellaneous aggregate or asphalt cement.

2. 1.5-Inch Crushed Stone shall meet the following requirements:

Sieve Size	Percent Finer By Weight
1.5-inch	55-100
1/4-inch	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

C. LOW PERMEABILITY FILL

1. Low permeability fill shall be a well graded material, free of rubbish, ice, snow, tree stumps, roots, organic material, or other deleterious materials. There shall be no stones greater than three inches in diameter. Material shall

have a permeability of no more than $1*10^{-6}$ centimeters per second at 95% standard proctor density, as determined by a compacted permeability test (ASTM D5084). Material shall be placed within ±2% of its optimum moisture content.

2. Gradation of low permeability fill shall adhere to the following:

U.S. Standard Sieve	Minimum Passing by Weight	Maximum Passing by Weight
#4	50%	100%
#40	40%	80%
#200	20%	50%

3. Soil characteristics shall abide by the following requirements:

Soil Characteristic	Minimum Value	Maximum Value
Plasticity Index (PI)	7	20
Uniformity Coefficient (C_u)	12	---
Coefficient of Curvature (C_c)	1	3

D. TOPSOIL

1. Topsoil shall be loose, friable, and free of refuse, stumps, roots, brush, weeds, frozen particles, and rock and stones greater than 1.0" diameter. Topsoil shall mean a soil meeting one of the following soil textual classes established by the United States Department of Agriculture Classification System:

   a. Loamy Sand

   b. Sandy Loam

   c. Loam

d. Silt Loam with less than 60% silt

2. Topsoil shall contain no more than 20% organic matter and no less than 6% organic matter

3. Topsoil shall possess a pH ranging from 6 to 7.5 standard units.

E. PROCESSED GRAVEL

1. Processed Gravel shall consist of a mixture of fine and coarse aggregates consistent with M.05.01 of Form 816 of the CT DOT Standard Specifications for Roads, Bridges, and Incidental Construction EXCEPT Processed Gravel shall be free of asphalt cement.

2. Processed Gravel shall meet the following requirements:

Sieve Size	Percent Finer By Weight
2.5 inches	100
2-inches	95-100
¾-inch	50-75
¼-inch	25-45
No. 40	5-20
No. 100	2-12

F. SELECT SAND FILL

1. Select Sand Fill shall consist of sand or sandy soil all of which that passes a 3/8-inch sieve and not more than 10% passing a No. 200 sieve.

2. Select Sand Fill shall be consistent with M.08.01 of Form 816 of the CT DOT Standard Specifications for Roads, Bridges, and Incidental Construction.

G. SUITABLE SITE MATERIALS

1. Soil generated during demolition and excavation to achieve specified depths and deemed acceptable for re-use as on-Site fill by the Engineer.

2. Coated and uncoated brick, concrete, and masonry materials removed as part of the Work, crushed to 3-inch minus with reinforcing steel removed consistent with Section 02 41 00 – Demolition.

H. UNSUITABLE SITE MATERIALS

1. Unsuitable Site Materials consists of soil generated from on-Site sources that are classified by Engineer either as visually, olfactory impacted and/or geotechnically unsuitable.

2. Unsuitable Site Materials shall be managed, handled, temporarily stockpiled, loaded, transported and disposed of in accordance with Section 02 81 00 – Waste Management and Disposal.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Material Testing Requirements

B. Laboratory Testing Requirements

3.2 MATERIAL TESTING REQUIREMENTS

A. CHEMICAL TESTING

Material	ETPH	VOCs	SVOCs	PP13 Metals + Barium	PCBS	PESTICIDES	Organic Content	pH
Free Draining Material	X	X	X	X	X	X		
Select Sand Fill	X	X	X	X	X	X		
Low Permeability Fill	X	X	X	X	X	X		
Processed Gravel	X	X	X	X	X	X		
Topsoil	X	X	X	X	X	X	X	X

B. PHYSICAL TESTING

Material	Grain Size/Stone Size Analysis (D422/C136)	Material Classification (D2487)	Modified Proctor (D1557)	Moisture Content (D2216)	Weight Per Unit Volume Of Uncompacted Materials (ASTM-698)
Free Draining Material	X	X	X	X	X
Topsoil	X	X		X	X
Select Sand Fill	X	X			
Low Permeability Fill	X	X	X	X	X
Processed Gravel	X	X	X	X	X

Material	Grain Size/Stone Size Analysis (D422/C136)	Material Classification (D2487)	Modified Proctor (D1557)	Moisture Content (D2216)	Weight Per Unit Volume Of Uncompacted Materials (ASTM-698)
1.5-Inch Crushed Stone	X	X			

3.3 LABORATORY TESTING REQUIREMENTS

A. Employ and pay for services of an independent laboratory acceptable to Owner and licensed in the State of Connecticut to perform specified testing.

B. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent laboratory. Contractor shall be responsible for payment for re-testing or re-inspection at no additional cost to the Owner.

C. Testing Agency/Laboratory Reports: After each test, promptly submit two copies of report to Engineer. When requested by Engineer, provide interpretation of test results. Include the following:

1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents

END OF SECTION

SECTION 31 37 00 - STONE AND RIPRAP

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Submittals

D. Permits and Codes

1.2 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

D. Section 01 35 43 – Environmental Procedures

E. Section 01 50 10 – Temporary Water Control

F. Section 01 57 13 – Temporary Erosion and Sediment Control

G. Section 01 57 16 – Temporary Project Controls

H. Section 03 30 00 – Reinforced Cast In Place Concrete

I. Section 04 05 00 – Repair of Stone Masonry Walls

J. Section 31 00 00 – Earthwork

K. Section 31 05 13 – Soil and Aggregate for Earthwork

1.3 DESCRIPTION

A. The Contractor shall furnish all equipment, materials and labor and do all Work necessary to furnish and place stone materials, including Crushed Stone Bedding and Riprap associated with the Work within the raceway as indicated on the Drawings, including, but not limited to the following:.

1. Furnishing and placing Crushed Stone Bedding for use as a bedding material for Riprap placed immediately upstream of the new concrete weir and as part of the new apron section located downstream of the weir.

2. Furnishing and placing of Riprap as part of the new dam construction as indicated on the Drawings.

3. Furnishing and placing of Riprap at the base of the walls of the raceway downstream of the new dam location as indicated on the Drawings.

C. Contractor shall be responsible for all laboratory testing and quality control requirements outlined within this Section and in Section 31 05 13 – Soils and Aggregate for Earthwork.

D. Riprap placement may involve handling and placement of individual stones to achieve a stable slope to the lines and grades shown on the Drawings to the satisfaction of the Engineer.

E. Crushed Stone Bedding and Riprap materials placed by the Contractor shall not exceed the limits shown on the Drawing unless pre-approved and directed by the Engineer.

E. All materials proposed for use to meet the requirements of this Section shall be pre-approved by the Engineer.

F. Direct dumping of stone materials into the raceway shall not be allowed. Contractor shall be responsible for the repair of any damage to the walls of the raceway as a result of his/her stone material placement procedures at no additional cost to the Owner.

1.4 SUBMITTALS

A. Ten days prior to the delivery of any stone material, the Contractor shall submit the name and location of the proposed quarry(s) and a certification letter indicating that the borrow material does not contain oil or hazardous material.

B. Ten days prior to the delivery of any stone material, the Contractor shall submit a description of the material and physical testing results specified in Section 31 05 13 – Soils and Aggregate for Earthwork.

C. The Contractor shall provide a representative sample of Riprap for inspection. Any difference of opinion between the Engineer and the Contractor shall be resolved by dumping and checking the gradation of two random truckloads of stone. Mechanical equipment and labor needed to assist in checking gradation shall be provided by the Contractor at no additional cost. If requested by the Engineer, the Contractor shall facilitate and participate in a field visit to the quarry(s) which is the proposed source of the stone material.

1.5 PERMITS AND CODES

A. Work shall conform to the Drawings and Specifications and shall comply with all rules, regulations, laws and ordinances of the State of Connecticut, Town of Vernon and of all other local authorities having jurisdiction.

B. The Owner will obtain the permits related to the removal of the raceway cover and existing dam and construction of the new dam system. These permits include a Connecticut Department of Energy and Environmental Protection (DEEP) Inland Water Resources Division (IWRD) Dam Construction Permit (DEEP-IWRD-APP-103) and a United States Army Corps of Engineers Category 1 Certification Form. Drafts of these permit applications are included in Attachment I for reference. These permit approvals will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within these permits.

PART 2 - PRODUCTS

2.1 SECTION INCLUDES

A. Riprap

B. Crushed Stone Bedding

C. Geotextile Filter Fabric

2.2 RIPRAP

A. Riprap shall consist of hard, durable, non-soluble and sound angular stone which is resistant to weathering. Rounded stones, boulders, elongated, thin or flat pieces whose breadth or thickness is less than one-third its length will not be allowed. The parent rock for rockfill and stone riprap stones shall be igneous or metamorphic rock. Sedimentary rock types such as shale, sandstone, or similar soft stone and soluble limestone and dolomite shall not be allowed. The stone shall be free of cracks, overburden, spoil, silt, clay, loam, organics and other deleterious matter.

B. Riprap stone shall conform to the suitability requirements of the U.S. Army Corps of Engineers Engineering Manual (EM) 1110-2-2302, and shall conform to the following standards:

Unit Weight	Dry unit weight 165 pcf or greater
Absorption	Less than 1 percent
Sulfate Soundness[1]	Less than 5 percent loss
Abrasion[2]	Less than 20 percent loss for 500 revolutions
Freezing-Thawing[3]	Less than 10 percent loss for 12 cycles
Drop Test[4]	No breakage or cracking
Wetting and Drying[5]	Less than 5 percent breakdown after 10 cycles
Solubility[6]	None (no loss of mass)

1) Sulfate Soundness: Stone(s) shall exhibit a less than five percent (5%) loss per the U.S. Army Corps of Engineers standardized method CRD-C 127 for Magnesium Sulfate.

2) Abrasion: Stone(s) shall exhibit a loss of less than 20 percent (20%) for 500 revolutions based on the Los Angeles abrasion test per U.S. Army Corps of Engineers standardized method CRD-C 145.

3) Freezing-Thawing: Stone(s) shall exhibit a loss of less than 10 percent for 12 cycles based on the U.S. Army Corps of Engineers standardized method CRD-C 144

4) Drop Test: The Contractor shall perform a Drop Test on representative samples of the stones to evaluate suitability. The test stone(s) shall be dropped from a bucket or cherry picker, or by other means from a height half the average diameter of the stone or a minimum of 2 feet onto a rigid surface or second stone of comparable size. The stone shall be examined before testing as well as afterward. Stone(s) shall exhibit no breakage or cracking based on the Drop Test. Failure criteria are development of new cracks, opening of existing cracks, and loss of small pieces from the surface of the stone. The Drop Test shall be repeated as directed by the Engineer.

5) Wetting and Drying: Submerge stone in water for 18 hours, oven dry at 140°F, and cool to complete one cycle.

6) Solubility: Apply 3 M hydrochloric acid (HCl) to the stone to determine if the stone is a carbonate rock (i.e soluble). The stone is considered soluble if a positive reaction (effervescence) is observed. HCl testing shall be performed in accordance witht eh United States Department of Agriculture – Natural Resources Conservation Service standardize method "Assessing Carbonates in the Field with a Dilute Hydrochloric Acid (HCL) Solution", Note 5.

C. Gradations of Riprap shall be as specified below or, if not stated, then based upon the thickness of the stone riprap layer as shown on the Drawings. Riprap layer thickness shall be defined as the typical (or average) layer thickness as measured perpendicular to ground surface or slope. In all cases, no more than five percent (5%) by weight shall pass a 2-inch sieve. No stone dimension shall be greater than three (3) times the length of another.

1. Riprap layers with thicknesses of 24 inches or greater shall meet the requirements of "Intermediate Riprap", as defined in Section M.12.02.2 of the State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction (2004)

Intermediate Riprap Gradation

Stone Size (in.)	% of the weight (mass)
18	0
10 - 18	30 - 50
6 – 10	30 – 50
4 – 6	20 – 30
2 – 4	10 – 20
< 2	0 – 10

2. Riprap layers with thicknesses less than 24 inches shall meet the requirements of "Modified Riprap", as defined in Section M.12.02.3 of the State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction (2004)

Modified Riprap Gradation

Stone Size (in.)	% of the weight (mass)
10	0
6 – 10	20 – 50
4 – 6	30 – 60*****
2 – 4	30 – 40
1 – 2	10 – 20
< 1	0 – 10

***** At least 50 percent (by weight) of the Modified Riprap shall consist of stones 5 inches or greater.

D. Riprap shall be well graded as a material without gaps in the gradation curve. The uniformity ratio (D_{85}/D_{15}) should be between 1.5 and 3.0.

E. Riprap shall be of the same parent rock from the same quarry and shall be visually similar to the existing riprap.

F. Control of gradation will be by visual inspection.

H. All new areas of Riprap greater than 12 inches thick shall be underlain by Crushed Stone Bedding material and Geotextile Filter Fabric, unless the subgrade is comprised of sound bedrock.

I. It is the intent of the Work that the source material for Riprap be local to the area to the extent possible and be comprised of local rock. This would preferably be a granitic or gneissic rock typical of the Central Connecticut region.

2.3 CRUSHED STONE BEDDING

A. Crushed Stone Bedding shall consist of crushed or broken stone produced by crushing bedrock extracted from a single-source quarry location. Crushed or broken stone shall be processed separately from overburden soil deposits, shall not contain crushed or uncrushed gravel, and shall be free of deleterious material or soft, friable particles.

B. Crushed Stone Bedding shall be consistent with the ¾-inch crushed stone specification located in M.02.07 of the CTDOT Standard Specifications for Roads, Bridges and Incidental Construction except Crushed Stone Bedding shall not contain any reclaimed miscellaneous aggregate or asphalt cement and shall meet the following requirements:

Sieve Size	Percent Finer By Weight
1-inch	100
3/4-inch	90-100
1/2-inch	20-55
3/8-inch	0-15
No. 4	0-5

C. The thickness of the Crushed Stone Bedding below Riprap shall be as indicated on the Drawings, but in no case shall the layer thickness be less than 6 inches.

D. All Crushed Stone Bedding shall be underlain by Geotextile Filter Fabric.

2.4 GEOTEXTILE FILTER FABRIC

A. Woven Geotextile Filter Fabric shall be composed of high-tenacity monofilament polypropylene yarns, which are woven into a stable network such that the yarns retain their relative position. Geotextile Filter Fabric shall be inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. Woven Geotextile Filter Fabric shall be Mirafi Woven Filter Weave (FW) 700 or Engineer approved equivalent.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Examination and Preparation

B. General Riprap Placement

3.2 EXAMINATION AND PREPARATION

A. Grades, both existing and finished, are indicated on the Drawings. The Contractor shall check all areas wherein grades are shown to satisfy him/herself as to actual conditions. The Contractor shall be responsible for establishing all control points and marks necessary for the Work. Precautions shall be taken to preserve the materials outside the lines of the work area in the most undisturbed condition possible. The Contractor shall:

1. Identify and check all required lines, levels, contours, and datum.

2. Notify the Engineer in writing of unanticipated subsurface conditions and discontinue affected work in area until notified to resume.

3. Verify materials to be reused are acceptable to the Engineer.

3.3 GENERAL RIPRAP PLACEMENT

A. The prepared subgrade in Riprap placement areas shall be cleared of all stones greater than 6 inches in diameter, along with any other items that may damage the Geotextile Filter Fabric (if used). The prepared surface shall be observed and approved by the Engineer prior to installation of the Geotextile Filter Fabric or placement of the Crushed Stone Bedding.

B. The Geotextile Filter Fabric shall be placed on the prepared subgrade by unrolling directly from the rolls in a direction approximately parallel to the slope. Folds and wrinkles in the Geotextile Filter Fabric should be avoided. Adjacent rolls or sections shall be overlapped a minimum of 3 feet, with the Geotextile Filter Fabric covering ground of higher elevation overlapping that which covers ground of lower elevation. The Geotextile Filter Fabric shall be fixed in place so that slippage does not occur as work continues. If neither a Crushed Stone Bedding layer nor a Geotextile Filter Fabric is shown below the Riprap layer, the Contractor shall place Geotextile Filter Fabric as if it had been shown on the Drawings.

C. Storage and handling of Geotextile Filter Fabric shall be as per the manufacturer's recommendations for protection from sunlight, ultraviolet rays, heat, dirt debris, etc. which could affect its properties. Uncovered Geotextile Filter Fabric shall not be left exposed to sunlight, either on the roll or in place. Torn, punctured or otherwise damaged fabric shall not be used. Mishandled or damaged material shall be removed from the site and replaced at no additional cost to the Owner.

D. Crushed Stone Bedding shall be placed immediately after the placement of the Geotextile Filter Fabric. The Crushed Stone Bedding shall be placed on the prepared subgrade and compacted in layers not exceeding 6 inches. Compaction shall be to be firm and stable configuration as determined by the Engineer. The Contractor shall grade and shape the final surface to conform to the Drawings and shall provide a uniform and acceptable surface for placement of the Riprap.

E. After Crushed Stone Bedding and/or Geotextile Filter Fabric placement, Riprap shall be placed on the slope in uniform fashion to the required thickness. Riprap may be dumped from an excavator or loader bucket, but from no greater than two feet above the ground. Riprap shall be dumped directly onto its final location without rolling down the slope. Care shall be taken during placement so as not to damage or disturb the Crushed Stone Bedding layer, the underlying Geotextile Filter Fabric, or the walls of the raceway. Do not dump Riprap directly from truck into raceway.

F. Riprap shall be placed in such a manner as to produce a reasonably well graded distribution of the various stone sizes, with no localized areas of uniform size material. The smaller size stones shall fill the spaces between the larger stones so as to obtain a minimum practical percent of void space. Dumping from trucks and spreading shall not be allowed. Post-placement manipulation of the Riprap shall be performed such that individual stones are in contact with one another, without gaps or spaces between.

G. Riprap shall be compacted and shaped by tamping and manipulation with the bucket of an excavator, or other means acceptable to the Engineer.

H. It may be necessary to handle and place individual Riprap stones to place the material such that it achieves a stable slope conforming to the lines, grades, and slopes shown on the Drawings. The Contractor shall be responsible for all efforts necessary to place the riprap in such a manner which produces a stable slope conforming to the lines, grades, and slopes shown on the Drawings. The Contractor shall not place material beyond the limits shown, unless approved by the Engineer.

I. "Chink" the final riprap surface, manually if necessary, to eliminate any significant gaps in the riprap surface. "Chinking" shall involve the placement and setting of smaller stones in gaps between larger stones so as to provide a more uniform coverage across the riprap surface.

J. Riprap placed directly on bedrock shall not require a Crushed Stone Bedding layer nor a Geotextile Filter Fabric layer; however, the adjacent Geotextile Filter Fabric should be lapped in such a manner so as to prevent loss of sub-grade or movement of soil along bedrock surfaces.

K. Tolerances for placement of Riprap shall be within plus or minus three inches (±3") of the dimensions shown on the Drawings.

END OF SECTION

SECTION 31 52 00 - TEMPORARY COFFERDAMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Permits

D. Submittals

1.2 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

D. Section 01 35 43 – Environmental Procedures

E. Section 01 50 00 – Temporary Facilities and Control

F. Section 01 50 10 – Temporary Water Control

G. Section 01 55 26 – Traffic Control

H. Section 01 57 13 – Temporary Erosion and Sediment Control

I. Section 01 57 16 – Temporary Project Controls

J. Section 01 66 00 – Product Storage and Handling Requirements

K. Section 02 81 00 – Waste Management and Disposal

L. Section 03 30 00 – Reinforced Cast-In Place Concrete

M. Section 04 05 00 – Repair of Stone Masonry Walls

N. Section 05 30 00 – Metal Decking

O. Section 05 52 13 – Pipe and Tube Railings

P. Section 31 00 00 – Earthwork

Q. Section 31 05 13 – Soil and Aggregate for Earthwork

R. Section 31 37 00 – Stone and Riprap

S. Section 40 05 59 – Slide Gate

1.3 DESCRIPTION

A. Contractor shall install a temporary cofferdam to prevent water intrusion into the Work area within the raceway and allow Work to proceed in dry and stable conditions. Work includes the furnishing of all labor, equipment, supplies, materials, and utilities required for the design, installation, operation, maintenance, supervision, and removal of the temporary cofferdam. A cofferdam system is expected to be required upstream of the new dam location, at a minimum. A downstream cofferdam may be required to prevent backwater from entering the work area of the new dam.

1. The Work area is located along the former Amerbelle Mill raceway of the Upper Hockanum River, which has a total drainage area of about 17 mi^2. The Contractor shall maintain positive flow through Paper Mill Pond and to the downstream end of the raceway during the Work. The raceway is the only means to allow gravity flow of the river water through the Site and to the American Pond downstream. The combination of the design height of the temporary cofferdam and diversion pipeline will provide some surcharge storage and discharge capacity to convey the stream flow safely through the Work area. However, it is acknowledged that the temporary water control system will not be able to accommodate significant runoff events. The Contractor must accommodate for this flow limitation issue in his/her design of the temporary water control system. Attachment J provides some information related to the approximate hydrologic and hydraulic characteristics of the Upper Hockanum River and the raceway. The Contractor must avoid creating an excessive surcharge condition in the Paper Mill Pond that would result in flooding of existing properties.

2. <u>Demobilization / Remobilization of Cofferdam System Due to Inclement Weather:</u> Certain weather conditions (such as an extended period of heavy rainfall and/or a weather event such as a hurricane) could cause a significant rise in the level of the river and pond and potentially inhibit proposed Work. The Owner does not control the inflow to Paper Mill Pond, as such, the reservoir can rise quickly. The Contractor must design his temporary water control measures to accommodate for rapid rising of the pond. Appropriate water safety precautions shall be provided by the Contractor as per OSHA regulations as needed for work in and around the pond and downstream channels. The Contractor is hereby notified that responses to such events are the Contractor's responsibility and no extra payment shall be made. The Contractor shall make provision for contingencies to deal with

inclement weather. In the event of rising waters and increasing flow, the Contractor may be required to act rapidly to protect the Work area (i.e. new concrete weir and outlet structure), including removal of personnel and equipment from the raceway and other potentially affected areas. This may also include partial or full removal of the temporary cofferdam. The Contractor may have to demobilize from the potentially affected areas on a temporary basis. No additional payment shall be made for demobilization and remobilization activities.

B. The types of acceptable temporary portable cofferdam systems shall be established by the conditions of the permits obtained by the Owner from the Connecticut Department of Energy and Environmental Protection and the U.S Army Corps of Engineers. Only temporary portable cofferdam systems specifically described as acceptable in this Section shall be provided and installed by the Contractor. The temporary portable cofferdam system shall be a portable, self-supporting metal frame and membrane system which can be installed "in the wet."

C. The temporary portable cofferdam systems shall be designed and certified by the specialty supplier OR shall be Contractor-designed and stamped by a Connecticut Registered Professional Engineer. The cofferdam systems shall meet the design criteria and performance standards described herein.

D. The temporary portable cofferdam system shall include furnishing and installing a full system for excluding both surface water and seepage. The systems shall include all necessary supports, membranes, and other required materials. It is the intent of these Specifications that the temporary portable cofferdam system work in conjunction with the Contractor's surface water and groundwater control systems to provide for total control of water in the Work area such that the Work can proceed safety and efficiently.

E. The Contractor can either set up the upstream temporary cofferdam: (a) immediately upgradient from the entrance of the Grove Street Bridge (as shown on the Drawings); or (b) within the raceway portion of the Upper Hockanum River upgradient from the location of the proposed relocated dam. The raceway bottom is believed to be comprised of relatively silty sand and soft sediment in this area. The raceway sides in this area are vertical composite concrete and stone masonry walls. The purpose of the temporary cofferdam is to store stream flow and to release it, in a controlled, manner via temporary diversion pipe or pipes to the downstream end of the raceway – a distance of about 350 feet. The cofferdam and diversion pipe concept is depicted on the Drawings.

F. At the discretion of the Contractor, a downstream cofferdam may be provided. The downstream cofferdam shall be placed as far downstream as is possible to facilitate construction of the new dam and appurtenant structures. The channel bottom is believed to be either stone masonry, concrete or bedrock. The purpose of the

downstream cofferdam is to completely exclude water that may be in the raceway, from entering (backwatering) into the Work area.

G. The temporary cofferdams shall be placed so as not to interfere with the other components of the Work. All Work shall be performed in accordance with the Drawings, Specifications, permit and approvals, and to the satisfaction of the Engineer.

H. The temporary cofferdam shall remain in-service until all Work in the enclosed area is complete and accepted by the Engineer.

I. The Work of this Section shall be performed in concert with temporary water controls specified in Section 01 50 10 – Temporary Water Control, sediment and erosion control efforts specified in Section 01 57 13 – Temporary Erosion and Sediment Controls, and the Drawings. Initial and ongoing dewatering within the cofferdam, as well as seepage control measures shall be provided under the Work of Section 01 50 10 – Temporary Water Control, but shall be specifically designed and implemented to work with the temporary cofferdam systems to keep the Work area dry and stable.

J. Temporary cofferdams shall be installed prior to the dismantling of the raceway roof/cap and existing dam and shall remain in place until the construction of the new dam, in-filling/repointing of raceway walls, and installation of scour protection is completed and the Work approved by the Engineer.

K. Temporary cofferdams shall be removed in their entirety at the completion of the Work.

L. Other minor cofferdams and water control barriers may be required to perform the Work. Contractor is responsible for furnishing, installing and maintaining these systems in order to maintain a dry and stable Work area at no additional cost to the Owner.

1.4 PERMITS

A. The Owner will obtain the permits related to the removal of the raceway cover and existing dam and construction of the new dam system. These permits include a Connecticut Department of Energy and Environmental Protection (DEEP) Inland Water Resources Division (IWRD) Dam Construction Permit (DEEP-IWRD-APP-103) and a United States Army Corps of Engineers Category 1 Certification Form. Drafts of these permit applications are included in Attachment I for reference. These permit approvals will be provided to the Contractor upon approval. The Contractor will be responsible for complying with all requirements and conditions within these permits.

1.5 SUBMITTALS

A. Within thirty (30) days of the Notice to Proceed, the Contractor shall submit the name and qualifications of his proposed cofferdam supplier and/or designer to the Engineer for approval.

B. Not less than 10 days prior to the scheduled installation of the temporary cofferdam(s), as part of his Water Control Plan, the Contractor shall submit his proposed method of installing, maintaining, and removing the temporary cofferdams, to the Engineer for review. This section of the Water Control Plan shall include at a minimum the following items:

1. The Contractor's proposed design, layout, sequence of installation, sealing, maintenance, operation, supervision, and removal of the temporary cofferdam. Maintenance and supervision requirements during non-working hours (i.e., nights, holidays and weekends) should be addressed.

2. For commercially available, proprietary cofferdam system, a letter from the supplier of a commercially available, proprietary cofferdam system that the proposed system is adequate to meet the design standards and performance criteria.

3. For Contractor-designed cofferdam system, design calculations, and drawings showing the layout in plan and section. The Contractor's design of the temporary cofferdam systems shall be stamped by a qualified, registered Connecticut Professional Engineer.

4. All materials to be used for the Work of this Section.

5. The designer's, installer's and supervisor's qualifications. These individuals shall each have documented experience on at least five installations of similar temporary cofferdams under similar conditions in ponds, lakes, or reservoirs.

6. Proposed method of initial lowering of water inside temporary cofferdam and subsequent raising of water levels at the completion of the Work, along with siltation control measures for any water that is discharged into the pond.

7. The Contractor's proposed emergency contingency plan for prevention or control of potential flooding of the Work area during storm events. The contingency plan should address, but not be limited to: maximum water levels, wind and/or wave conditions under which the temporary cofferdams may be used, emergency signaling procedures, health and safety plan, emergency breaching and controlled flooding procedures and leakage/seepage/sand boil control measures.

8. Proposed methods of controlling seepage and maintaining stable subgrade conditions inside the cofferdam.

9. Proposed methodology for sealing the ends of the cofferdams and interfacing with abutting structures.

PART 2 - PRODUCTS

2.1 SECTION INCLUDES

A. Temporary Portable Cofferdam System

B. Downstream Cofferdam Sand Bags

2.2 TEMPOARY PORTABLE COFFERDAM SYSTEM

A. At a minimum, an upstream temporary portable cofferdam system is required to facilitate construction. The temporary cofferdam system shall be a portable cofferdam system which can be installed and removed "in the wet." The temporary cofferdam system shall be a system which does not constitute fill of the waterway and must be completely removable upon the completion of the Work.

B. The acceptable temporary portable cofferdam system shall be a steel frame and membrane system for the temporary retention of water. The system shall utilize a sloped tubular frame system to support a robust impermeable membrane. The system may be Contractor-designed and fabricated or may be a commercially available, proprietary system. The Portadam system provided by PORTADAM, Inc. of Laurel Springs, N.J. or Engineer approved equivalent shall be considered an acceptable temporary portable cofferdam system.

C. The temporary cofferdam shall retain water across the full range of water surface elevations specified herein and shall be capable of accommodating rapid and frequent variation in water surface elevation.

D. The temporary cofferdams shall provide complete enclosure across the full width of the waterway and a sufficient distance up and on the banks (or vertical side walls of the raceway) to prevent water from flowing around the sides of the cofferdam during design high water.

E. The temporary cofferdams shall provide for control of seepage through sediment, soil, and other material under the cofferdam. Seepage control may be accomplished through gradient reduction via an upstream bottom membrane ("skirt") or other appropriate methods. Seepage control shall account for required excavations on the inboard side of the cofferdam. The Contractor shall provide all supplemental

seepage controls necessary to maintain the stability of excavations on the inboard side of the cofferdam.

F. All temporary cofferdam components shall be clean of contaminants and any other materials that could adversely impact water quality.

G. Frame components shall be steel. Liner shall be impervious, inert, flexible fabric membrane. The bed sealing apron shall be weighted to provide negative buoyancy.

H. System shall be sized and designed in accordance with the foundation bearing capacities of the base material at the cofferdam location, based on anticipated water depth (hydraulic loading). System shall be able to accommodate pond levels coincident with the top of the system.

I. Cofferdam systems which are specifically excluded from use as the primary temporary upstream cofferdam include: sand bags, "super sack" sandbags, HESCO cages, waterfilled bladders, concrete blocks, and any other system which would be considered "fill" by the U.S. Army Corps of Engineers. Loose soil or other fill shall NOT be utilized in cofferdams.

J. The temporary cofferdam shall be designed for all expected conditions, including, but not limited to: wind, variations in pond levels, ice loading, variations in groundwater levels, bottom conditions, and bathymetry/topography.

K. Upstream Cofferdam Design Criteria (NAVD88 Vertical Datum):

1. Normal Water Surface Elevation:	471.5' (varies)
2. Maximum Design Water Surface Elevation:	474.0'
3. Minimum Freeboard at Max. Water Surface:	~1 feet
4. Maximum Top of Cofferdam:	475.0'
5. Est. Channel Bottom Elevation:	469.5' (varies)

L. Any sandbags shall be free of rips or tears which would lead to a loss of sand and bag openings shall be tied to prevent the same.

M. Contractor-Designed Cofferdam Performance Criteria:

1. Factor of Safety vs. Sliding, Overturning, & Bearing Failure

    a. Normal Water Surface: 2.0

    b. Maximum Water Surface: 1.5

2. Maximum Seepage Exit Gradients:

a. Normal Water Surface: 0.2

b. Maximum Water Surface: 0.3

2.3 DOWNSTREAM COFFERDAM SAND BAGS

A. Although the design calls for a temporary diversion pipe to extend from the upstream cofferdam and along the entire length of the raceway, a downstream cofferdam may be required to prevent backwater from entering the work area such that the new dam shall be constructed in dry and stable conditions.

B. Select Sand Fill consistent with the requirements of Section 31 05 13 – Soils and Aggregate for Earthwork shall be used for sandbags.

C. Standard Sand Bags:

1. Standard sand bags shall be military-grade constructed of tubular woven polypropylene with a minimum fabric weight of 2.2 ounces per square yard and double sewn seams and attached tie strings. Sand bags shall have a 1,600 hour UVI rating.

2. Drop Resistance Test: The sandbag filled with 44 lbs of dry Select Sand Fill shall withstand three consecutive 36 inch free fall drops onto a hard unyielding surface without rupture of fabric on seams. Drops to be onto face, side, and butt.

D. Large, Mechanically-Placed Sand Bags:

1. Large sand bags (“super sacks”) shall be military-grade constructed of tubular woven polypropylene with sufficient strength necessary to permit the bag to be lifted when the full volume of the bag is filled with saturated sand. Handling straps shall be integrally sewn to the bag to permit lifting. Sand bags shall have a 1,600 hour UVI rating.

E. Sand bags shall ONLY be used in areas which are above normal water surface elevation.

F Sandbags shall be free of rips or tears which would lead to a loss of sand and bag openings shall be tied to prevent the same.

G. Sandbag closure berms shall be placed as per USACE guidance for stacking and base width-to-height ratio.

PART 3 - EXECUTION

3.1 SECTION INCLUDES

A. General

B. Erection of Cofferdam System

C. Erection of Sandbag Cofferdam

D. Removal

E. Water Management

3.2 GENERAL

A. The Contractor shall be responsible for maintaining a safe, clean and accessible Work area at all times. The Contractor shall have full responsibility for the complete and proper diversion of water from the Work area at all stages of the Work within the raceway including during removal of the raceway cover/cap and existing dam. The Contractor shall, at no additional cost to the Owner, repair any damage to any equipment, material, work, Site and off-Site structures and features, the Grove Street bridge, the Brooklyn Street bridge or the sidewalls or base of the raceway caused by seepage, flood, overtopping, or other failure of the temporary cofferdam system.

B. The Contractor shall take all reasonable and prudent precautions during construction to provide and maintain the temporary cofferdams and other related equipment. The temporary cofferdams shall be maintained and supervised by the Contractor's personnel qualified to do such work.

C. All OSHA requirements and all requirements of the permits and approvals shall be satisfied.

D. Contractor shall minimize disturbing wetlands during the construction/installation of the temporary cofferdam to the maximum extent practical. Contractor shall be responsible for restoring any disturbed wetland areas at no additional cost of the Owner.

E. In the case of overtopping of the cofferdam by settlement, high waters, or failure of the cofferdam, means shall be provided for controlled flooding of the work area.

F. All pumping and water discharge shall be in accordance with Section 01 50 10 - Temporary Water Control.

G. Temporary cofferdam components which settle, tilt or move laterally shall be righted, reset or enlarged as necessary at no additional expense to the Owner.

H. In the event of water levels rising higher than the limits of the cofferdam(s) during the performance of the work, the Contractor shall undertake measures to protect existing structures and new work including potentially demobilizing from the work area.

3.3 ERECTION OF COFFERDAM SYSTEM

A. Prior to the design of the cofferdam system, the Contractor or his supplier shall investigate the actual depth of water and nature of channel bottom to confirm bathymetry and foundation assumptions.

B. The cofferdams shall be located along the general alignment as shown on the Drawings. The Contractor may install the upstream cofferdam at either location: (a) just upgradient from the entrance to the Grove Street Bridge; or (b) within the raceway immediately upstream from the location of the new dam. The Contractor may adjust the alignment as needed to accommodate his or her anticipated construction access needs.

C. Removal of surficial cobbles, riprap, and boulders near the surface or other adjustments to the channel bottom may be required.

D. It may be necessary to clear vegetation along the banks of the pond to provide appropriate surface conditions for the cofferdams.

E. Contractor shall be responsible for the management and off site disposal of all materials generated during the installation of the temporary cofferdams consistent with the requirements of Section 02 81 00 – Waste Management and Disposal.

F. Secure the outboard limits of the membrane as needed and provide ballast against floatation and lifting.

G. All erection shall occur “in the wet”.

3.4 ERECTION OF SANDBAG COFFERDAM

A. Prepare ground surface by removing vegetation and loose soil. Remove only such vegetation as is necessary to clear footprint of berm and provide access.

B. Contractor shall be responsible for the management and off site disposal of all materials generated during the installation of the temporary cofferdams consistent with the requirements of Section 02 81 00 – Waste Management and Disposal.

C. Fill sandbags as per USACE recommendations in an upland location.

D. Stack sandbags as per USACE recommendations to provide safe stable berm for maximum water surface elevation. Poly sheeting may be added at the Contractor's option to the outboard face of the berm.

3.5 REMOVAL

A. The Engineer shall be informed at least five days prior to removal or relocation of any portion of the temporary cofferdam systems. The work inside the temporary cofferdams must be observed and accepted by the Engineer prior to removal.

B. The temporary cofferdam structures shall remain in place for a period of at least two days after re-flooding of the dewatered area to the then current impoundment water surface elevation to allow for containment and settlement of any miscellaneous suspended particles. The re-flooding will be done in conjunction with the Town closing the new slide gate, which is part of the new dam construction.

C. All parts of the temporary cofferdams shall be removed from the Site at the end of the Work.

D. All sandbags and all sand material shall be removed at the completion of the project and the area restored.

3.6 WATER MANAGEMENT

A. The Contractor shall be responsible for the management of water within the areas encircled by the cofferdams and shall be responsible for all necessary bypass flows.

END OF SECTION

DIVISION 32
EXTERIOR IMPROVEMENTS

SECTION 32 31 13 – FENCING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. References

C. Description of Work

D. Submittals

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures

B. Section 01 35 29 - Health, Safety, and Emergency Response Procedures for Contaminated Sites

C. Section 01 35 43 – Environmental Procedures

D. Section 01 35 53 - Security Procedures

E. Section 01 50 00 – Temporary Facilities and Controls

F. Section 01 55 26 - Traffic Control

G. Section 01 57 13 – Temporary Erosion and Sediment Control

H. Section 01 66 00 – Product Storage and Handling Requirements

I. Section 02 81 00 - Waste Management and Disposal

J. Section 31 00 00 - Earthwork

1.3 REFERENCES

A. Connecticut Department of Transportation (CTDOT), Office of Engineering Standard Sheets dated July 2013.

B. CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, dated 2004.

C. ASTM A153 Standard Specification for Zinc Coating on Iron and Steel Hardware.

D. ASTM A123 Standard Specification for Zinc Coating on Iron and Steel Products.

E. AASHTO M180-12 Standard Specification for Corrugated Sheet Steel Beams for Highway Guardrail.

F. ASTM F567 Standard Practice for Installation of Chain Link Fence.

1.4 DESCRIPTION OF WORK

A. The Contractor shall be responsible for all labor, equipment, materials, and tools to furnish and install an operable and complete perimeter fencing system during the performance and upon completion of the Work as shown on the Drawings and in accordance with Section 01 35 53 – Security Procedures. Work includes, but is not limited to the following:

1. Maintain and repair/replace in kind damaged existing perimeter fencing and gates within and at the Limits of Work as needed to prevent and provide access to the Site. All existing fencing and gates are to remain at the completion of the Work.
2. Install minimum 8-foot-high, temporary chain link fencing and gates as shown on the Drawings to secure the Site during the execution of the Work.
3. Install minimum 6-foot-high, permanent chain link fencing and gates as shown on the Drawings. In lieu of installing temporary chain link fencing, Contractor may elect to install permanent chain link fencing at the start of the Work. Contractor shall be responsible for replacing permanent chain link fencing that is damaged during the execution of the Work at no additional cost to the Owner.
4. Install metal beam guardrails on the north and south sides of the Brooklyn Street as shown on the Drawings.

B. Contractor shall be responsible for the off-loading and storage of all delivered fencing and metal beam guardrail materials in accordance with Section 01 66 00 – Product Storage and Handling Requirements. Fencing and metal beam guardrail materials shall be stored off the ground surface.

C. Any soil or waste generated during the installation of the perimeter fencing and metal beam guardrails shall be managed in accordance with Section 02 81 00 – Waste Management and Disposal and Section 31 00 00 – Earthwork.

1.5 SUBMITTALS

A. Contractor shall prepare a perimeter fencing and metal beam guardrail section for the Project Work Plan consistent with Section 01 33 00 – Submittal Procedures. This section of the Project Work Plan shall describe means and methods for installing the perimeter fencing and metal beam guardrails at the Site. At a minimum, the following shall be included in this section of the Project Work Plan:

1. A written description of permanent fencing installation procedures.

2. A written description of metal beam guardrail installation procedures.

3. Cutsheets and/or specifications for all proposed fencing and metal beam guardrail materials including fasteners and anchors.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Temporary Fencing

B. Permanent Fencing

C. Metal Beam Guardrails

D. Concrete

2.2 TEMPORARY FENCING

A. Temporary Fencing shall be minimum 8-feet-high, No. 9 gauge, galvanized chain link fence with 2-inch diamond mesh lattice and vertical and horizontal bracing.

B. Temporary fence panels shall be installed with either:

1. Detachable concrete bases sized to have a minimum weight of 100 pounds; or,

2. Fabricated galvanized pipe frame with a minimum width of 36-inches and ballasted with two 50-pound (minimum) sand bags.

C. Additional weight may be required depending on wind loads and Site conditions. Contractor shall be responsible for assessing and supplying sufficient weight so that fencing is secure at all times.

2.3 PERMANENT FENCING

A. Permanent Fencing shall be minimum 6-feet-high galvanized chain link fence.

B. Posts

1. Line posts shall be 2-1/2 inch outside diameter, galvanized steel pipe weighing not less than 3.65 pounds per linear foot.

2. Terminal, corner and pull posts shall be 3 inch outside diameter, galvanized steel pipe weighing not less than 5.79 pounds per linear foot.

3. Gate posts shall be 4 inch outside diameter, galvanized steel pipe weighing not less than 9.11 pounds per linear foot.

C. Rails

1. Top and bottom rails shall be provided for all fencing and shall be 1-5/8 inch outside diameter, galvanized steel pipe weighing not less than 2.27 pounds per linear foot and provided with couplings approximately every 10 feet.

D. Horizontal Braces

1. Horizontal braces shall be provided where required at all pull, corner and terminal posts midway between the top rail and ground, and shall extend from pull, corner and terminal posts to the first adjacent line posts.

2. Braces shall be securely fastened to the line posts, pull, corner and terminal posts by rail ends and brace bands.

3. Brace rails shall be 1-5/8 inch outside diameter pipe weighing not less than 2.27 pounds per linear foot with plain ends. Each corner and pull post shall be braced and trussed on two sides; each terminal post shall be braced and trussed on one side.

E. Diagonal Braces

1. Diagonal braces (truss rods) shall be trussed from the brace ends on the line post back to the bottom of pull, corner, or terminal post and fastened to it by a brace band. The diagonal brace rods shall be steel, 3/8-inch diameter.

2. Each brace rod shall be provided with a heavy malleable iron hot-dip zinc-coated turnbuckle to provide means for adjusting the tension in the diagonal brace.

F. Fabric

1. Fabric shall be ASTM A392, Class 1, zinc coated (1.2 ounces), steel wire/fabric, woven in a 2 inch mesh size, 11-gauge (0.120 inches) coated wire size, galvanized before weaving, with twisted barbed selvages top and bottom.

G. Gates

1. Gate frames shall be galvanized steel construction, fabricated of 2 inch outside diameter pipe weighing not less than 2.72 pounds per foot.

2. Frames shall be of all-welded construction with malleable iron corners, rigid enough to be free of twist or sag.

3. Gates shall be fitted with a heavy zinc-coated steel box hinge system. Swing gate assembly shall include clamps, hinges and all other required appurtenances for the complete installation and the smooth operation of the specified gates.

H. Latches

1. Outer gate catches of approved design shall be made of hot-dip zinc coated malleable iron and be designed to anchor securely into concrete footings 12 inches in diameter and 2-feet deep, so as to hold gate firmly in open position.

I. Gate Keeper

1. Gate keeper shall be located on centerline of the double gates and adjusted with gatekeeper rod to prevent opening of gate when padlocked.

2. Gate keeper shall consist of 1-3/4 inch wide by 1-3/4 inch deep zinc-coated steel channelway about 7 inches long, anchored into a 12-inch by 2-foot deep concrete foundation, with a 1-1/2 inch nominal diameter galvanized steel pipe which is 18 inches long, welded to the keeper channelway.

3. Keepers must be specifically approved before installation.

4. All gate accessories shall be hot-dip zinc-coated steel, unless otherwise directed.

2.4 METAL BEAM GUARDRAILS

A. Metal Beam Guardrails shall consist of a single W steel rail with a gray galvanized coating.

B. Rail elements and terminal sections shall consist of Class B base metal thickness.

C. Rail sections shall be a maximum of 12.5 feet in length.

D. Posts shall consist of W6X8.5 metal posts with a gray galvanized coating and a maximum spacing of 6’ 3” between posts center to center.

E. All connectors, bolts, rods, nuts and washers shall be steel with a gray galvanized coating.

2.5 CONCRETE MIX

A. Concrete conforming to ASTM C94, having a minimum compressive strength of 3,000 PSI at 28 days.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. Installation of Temporary Fencing

B. Installation of Permanent Fencing

C. Installation of Metal Beam Guardrails

D. Inspection, Tests, and Guarantees

3.2 INSTALLATION OF TEMPORARY FENCING

A. Temporary Fencing shall be installed at the locations shown on the Drawings.

B. Temporary Fencing shall be relocated or additional Temporary Fencing installed as needed to secure the Limits of Work during all phases of the Work.

C. Contractor shall set fence panels in ballasted stands or detachable concrete bases which shall be oriented perpendicular to the fence line. Fence panels shall be attached to each other using a minimum of two galvanized saddle clips.

D. The ends of Temporary Fencing shall be rigidly affixed to buildings or other Site features to mitigate potential unauthorized entry to the Work areas.

3.3 INSTALLATION OF PERMANENT FENCING

A. Permanent Fencing shall be installed in conformance with ASTM F567 and manufacturer's recommendations.

B. Space line posts at intervals not exceeding ten feet.

C. Terminal and gate posts shall be set plumb in concrete footings. Concrete footings shall extend a minimum of 3 feet below grade. The top of the concrete footings shall extend a minimum of 2-inches above grade to direct water away from the posts.

D. Line posts may be driven in place or set in concrete footings. Line posts shall be driven to a minimum embedment depth of 2 feet. Concrete footings shall extend a

minimum of 2 feet below grade. The top of the concrete footings shall extend a minimum of 2-inches above grade to direct water away from the posts.

E. Manage excess soil generated from post installation activities in accordance with Section 02 81 00 – Waste Management and Disposal.

F. Brace gate and terminal posts back to adjacent line posts with horizontal brace rails and diagonal truss rods.

G. Install through line loop caps connecting sections with sleeves to form a continuous rail between terminal posts.

H. When top rail is omitted, stretch tension wire through loop caps and fasten to terminal posts.

I. Stretch between terminal posts 6-inches above grade and fasten to outside of line posts with tie wires.

J. Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete.

K. Install nuts for fittings, bands and hardware bolts on inside of fence.

3.4 INSTALLATION OF METAL BEAM GUARDRAILS

A. Metal posts for the Metal Beam Guardrails shall either be installed:

1. Mechanically driven to a minimum of 42-inch below ground surface; or,

2. Anchored to the deck of the Brooklyn Street bridge with a minimum of six, ¾-inch, 12-inch long galvanized bolts. Bolts shall be epoxied in place.

B. Manage excess soil generated from post installation activities in accordance with Section 02 81 00 – Waste Management and Disposal.

C. Maximum spacing between metal posts shall be 6 feet 3 inches.

D. Sections of Metal Beam Guardrails shall be rigidly connected to the metal posts with galvanized fasteners and connectors consistent with manufacturer's recommendations.

E. The face of the Metal Beam Guardrails shall be a minimum of 7-inches off the edge of Brooklyn Street and the top of the Metal Beam Guardrails shall be set 29-inches above the surface of Brooklyn Street.

F. The ends of the Metal Beam Guardrails shall either be rigidly connected to:

1. A pre-cast or cast in place concrete block with base dimensions of 3 feet, 1-inch square and top dimensions of 2 feet, 7-inches square. The concrete block shall be extend a minimum of 3 feet, 1-inch below grade, or

2. The corner of buildings not scheduled for removal/demolition.

3.5 INSPECTION, TESTS AND GUARANTEES

A. Engineer may inspect and test any materials or their fabrication at any time during fence or guardrail installation.

B. The Contractor shall furnish to the Owner, satisfactory guarantees by the fence and guardrail manufacturer covering any faults and/or defects in any part of the fences or guardrails arising from defective workmanship or materials for a period of one year from the date of final acceptance of the project.

END OF SECTION

SECTION 32 90 00 - LANDSCAPE WORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. References

D. Quality Assurance

E. Submittals

1.2 RELATED SECTIONS

A. Section 01 11 00 – Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

D. Section 01 35 43 – Environmental Procedures

E. Section 01 50 00 – Temporary Facilities and Control

F. Section 01 57 13 – Temporary Erosion and Sediment Control

G. Section 01 57 16 – Temporary Project Controls

H. Section 01 66 00 – Product Storage and Handling Requirements

I. Section 02 81 00 – Waste Management and Disposal

J. Section 31 00 00 – Earthwork

K. Section 31 05 13 – Soils and Aggregates for Earthwork

1.3 DESCRIPTION

A. Contractor shall provide all labor, materials, and equipment to install the following landscaping materials as shown on the Drawings:

1. Supply and install a 6-inch thick layer of topsoil in the areas indicated on the Drawings.

2. Supply and apply fertilizer and lime to the topsoil per soil testing recommendations.

3. Supply and spread grass seed and wood fiber mulch to the topsoil via hydroseeding.

4. Supply and install jute netting over seeded surfaces with 3:1 slopes or steeper.

5. Supply and install asphalt curbing on processed gravel subgrade along the south side of Brooklyn Street at the toe of newly loamed slopes.

6. Temporary stabilization of disturbed surfaces prior to final restoration in the event of a temporary Work shutdown.

1.4 REFERENCES

A. Connecticut Department of Transportation (CTDOT) Specifications for Roads, Bridges, and Incidental Construction Form 816 (Latest Edition).

B. Connecticut Department of Energy and Environmental Protection's Guidelines for Soil Erosion and Sediment Control dated 2002.

C. Latest version of the American Association of State Highway and Transportation Officials (AASHTO) standards:

1. AASHTO M140 – Emulsified Asphalt Particle Size Analysis of Soils.

2. AASHTO M156 – Requirements for Mixing Plants for Hot Mixed, Hot Laid Bituminous Paving Mixtures

3. AASHTO T209 – Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

D. Asphalt Institute Publication MS-22, Construction of Hot Mix Asphalt Pavements, Chapter 5.

E. American Society of Testing Materials (ASTM) D2950 – Standard Test Method for Density of Bituminous Concrete In Place by Nuclear Methods.

1.5 QUALITY ASSURANCE

A. CODES AND STANDARDS

1. All work and materials shall conform to the latest applicable sections under the State's various jurisdictions.

2. All work and materials shall be in full accordance with other State, Town of Vernon, and utility laws, rules, and regulations.

B. LINE AND GRADE CONTROL

1. Contractor shall be responsible for establishing and maintaining line and grade control for all aspects of the Work and as specified on the Drawings. All survey work conducted on the project shall correspond to the Site coordinate system and vertical datum as shown on the Drawings.

2. Grade tolerances for the landscape work shall be within the following:

i. Horizontal tolerance: 0.1 feet

ii. Vertical tolerance: 0.1 feet

1.6 SUBMITTALS

A. Submit the following information to the Engineer at least 14 days prior to delivery of the material to the Site. Use of materials by Contractor prior to testing and approval or rejection shall be at Contractor's risk and at no additional cost to the Owner.

1. Topsoil

a. Name of supplier and source history.

b. Sample of topsoil.

c. Analytical testing results consistent with Section 31 05 13 – Soils and Aggregates for Earthwork.

d. Soil analyses for organic content, pH, exchangeable acidity, extractable nutrients (phosphorus, potassium, calcium, magnesium, iron, manganese, zinc, copper, boron, and sulfur). Soil analyses shall include recommended rates and types of soil conditioners (fertilizer and lime).

2. Soil Conditioners: Manufacturer’s literature including but not limited to source information, chemical and physical testing results, for the recommended Soil Conditioners. Manufacturer shall also supply documentation showing state approval for intended use.

3. Seed mix: Affidavit and testing report for the seed mixture.

4. Jute Netting: Cut sheets and technical data from the manufacturer including installation instructions.

5. Sample of Bark Mulch.

6. Mix design for the Bituminous Concrete.

PART 2 PRODUCTS

2.1 SECTION INCLUDES

A. Topsoil

B. Grass Seed

C. Soil Amendments

D. Wood Fiber Mulch

E. Jute Netting

F. Bituminous Concrete

G. Processed Gravel

2.2 TOPSOIL

A. Topsoil shall be consistent with Part 2 of Section 31 05 13 – Soils and Aggregates for Earthwork.

2.3 GRASS SEED

A. Seed shall be fresh, clean, and new crop seed composed of the following varieties mixed in the specified proportion:

Creeping Red Fescue:	35 pounds per acre
Perennial Ryegrass:	30 pounds per acre
Red Top:	5 pounds per acre
Alsike Clover:	5 pounds per acre
Birdsfoot Trefoil:	5 pounds per acre
Lance-Leaved Coreopsis:	3 pounds per acre
Oxeye Daisy:	3 pounds per acre
Butterfly Weed:	3 pounds per acre
Blackeyed Susan	3 pounds per acre
Wild Lupine	3 pounds per acre

2.4 SOIL AMENDMENTS

A. FERTILIZER

1. Fertilizer shall be a complete fertilizer, the elements of which are derived from organic sources. Fertilizer shall be a standard product complying with state and federal fertilizer laws.

2. Percentages of nitrogen, phosphorus and potash shall be based on laboratory tests on soils outlined herein and approved by Engineer. For purpose of bidding, assume application of 10-10-10 fertilizer at a rate of 300 pounds per acre and limestone at a rate of 1 ton acre.

3. Fertilizer shall be delivered to the Site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of Manufacturer. Containers shall bear the Manufacturer's guaranteed statement of analysis, or a Manufacturer's certificate of compliance covering analysis shall be furnished to Engineer. Store fertilizer in a weatherproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.

2.5 WOOD FIBER MULCH

A. Wood Fiber Mulch shall be manufactured from coniferous or hardwood trees and shall be free from shavings, rot, mold, foreign material, or debris. Wood Fiber Mulch shall be of uniform texture and may contain a non-toxic marking dye. The moisture content of the material shall be less than 12% when delivered to the Site. Wood Fiber Mulch shall be capable of forming a homogenous slurry when mixed with water.

2.6 JUTE NETTING

A. Jute netting shall be a uniform, open, plain weave cloth of undyed and unbleached single jute yarn. The yarn shall be of a loosely twisted construction and it shall not vary in thickness more than one-half its normal diameter. Jute netting shall be furnished in rolled strips and shall meet the following requirements:

1. Width - 48 inches, plus or minus one inch

2. 78 warp - ends per width of cloth (minimum)

3. 41 weft - ends per yard (minimum)

4. Weight shall average 1.22 pounds per linear yard with a tolerance of plus or minus 5%.

B. Staples shall be U-shaped and shall be approximately six inches long and one inch wide. Machine made staples shall be of No. 11 gauge or heavier steel wire. Handmade staples shall be made from 12-inch lengths of No. 9 gauge or heavier steel wire.

2.7 BITMUMINOUS CONCRETE

A. Bituminous Concrete for the asphalt curbing shall consist of a mixture of coarse and fine aggregate materials meeting the requirements of Bituminous Class C in Section M.04 of the CTDOT Form 816.

B. Bituminous Concrete shall meet the following gradation:

Sieve Designation No.	Content Percentage
3/8-inch	95-100
No. 4	65-87
No. 8	40-70
No. 30	20-40
No. 50	10-30
No. 200	3-8

2.8 PROCESSED GRAVEL

A. Processed Gravel shall be consistent with the requirements of Section 31 05 13 – Soils and Aggregate for Earthwork.

PART 3 EXECUTION

3.1 SECTION INCLUDES

A. General

B. Job Conditions

C. Incorporation of Soil Amendments

D. Installation of Grass Seed

E. Installation of Jute Netting

F. Maintenance

G. Acceptance of Grass

H. Installation of Asphalt Curbing

3.2 GENERAL

A. Perform restoration Work in compliance with applicable requirements of governing authorities having jurisdiction and permits/approvals obtained to complete the Work.

3.3 JOB CONDITIONS

A. Coordinate all work of this Section with related Work of other Sections. Failure to coordinate properly will not reduce the obligation to meet the standards of acceptance of the various elements of work contained herein.

B. SEQUENCING AND SCHEDULING

1. No seed shall be placed until acceptance of grading by Engineer.

2. All existing or new landscaped materials damaged by construction operations or other causes shall be repaired to Engineer's satisfaction, at no additional cost to Owner.

C. Plant grasses during recognized normal planting seasons.

3.4 INCORPORATION OF SOIL AMENDMENTS

A. FERTILIZER

1. Fertilizer rates of application shall be applied as per soil test recommendations.

B. LIME

1. Lime rates of application shall be applied as per soil test recommendations.

3.5 INSTALLATION OF GRASS SEED

A. GRASS SEED

1. The calendar dates for installing Grass Seed shall be:

i. Spring - March 15 to May 15

ii. Fall - August 15 to October 30

iii. Contractor shall temporarily stabilize landscaped areas if seeding is not performed within these windows to avoid erosion. Temporary stabilization activities include seeding with winter rye grass seed. Jute netting shall be installed on 3:1 slopes or steeper.

2. Planting of Grass Seed:

i. Grass Seed shall be placed on prepared soil that has been watered and is still moist. The soil shall not be worked when the moisture content is so great that excessive compaction will occur, or when it is so dry that a dust will form in the air or clods will not break readily. Water shall be applied, if necessary, to provide ideal moisture content for tilling and for planting as herein specified.

ii. After completion of soil conditioning, landscaped areas shall be hydroseeded at the following rates:

a. 6 pounds of Grass Seed per 1,000 square feet

b. 40 pounds of Wood Fiber Mulch per 1,000 square feet

3. Protection - Erect barricades and warning signs as required to protect newly seeded areas. Install Jute Netting over the seeded areas consistent with this Section and maintain barricades until acceptance.

3.6 INSTALLATION OF JUTE NETTING

A. Install Jute Netting on 3:1 slopes or steeper within 48 hours of hydroseeding the areas specified on the Drawings.

B. Jute Netting shall be placed uniformly, in contact with the underlying soil.

C. The top edge of each strip shall be anchored by placing netting in a 6 inch deep by 6-inch wide trench. The netting shall extend approximately 12 inches beyond the up-slope portion of the trench. The netting shall be anchored in the trench with a row of staples approximately 12 inches apart.

D. Backfill trench with Topsoil, hand tamp, seed the trench and then wrap the 12-inches of netting back over the trench. Anchor the netting with a row of staples approximately 12-inches apart.

E. Edges of adjacent strips shall be overlapped 6 inches with a row of staples at a maximum interval of 3 feet in the lapped area.

F. Bottom edges shall be overlapped 12 inches over the next lower strip or buried as specified for top edges.

3.7 MAINTENANCE

A. Maintenance activities shall consist of the following elements:

1. Watering, fertilizing, weed control, disease control, insect control, mowing, trimming, and other operations such as rolling, regrading, replanting, as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

2. Contractor shall guarantee work covered by this Section to the extent that all seeded areas shall be uniform in color, leaf texture and shoot density and be reasonably free of weeds, diseases and other visible imperfections at acceptance.

3. Contractor shall be responsible for the watering of all seeded areas. Watering should begin immediately after installation. The amount of water required will vary depending upon season, weather, temperature, wind, and slope. Engineer's opinion will prevail in the event that a dispute develops with Contractor as to whether or not seeded areas are moist.

i. First Week: Contractor shall provide all labor and arrange for all watering necessary for rooting of the grass seed. Soil shall be kept moist at all times. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of at least 4 inches. Watering should be done during the heat of the day to prevent wilting.

4. Watering shall be done in a manner which will provide uniform coverage, prevent erosion due to application of excessive quantities over small areas, and prevent damage to the finished surfaces due to the watering equipment. Contractor shall furnish sufficient watering equipment to apply one complete coverage to the seeded areas in an 8 hour period.

5. Contractor shall care for all of the seeded areas until the work has been accepted. Care shall include any re-grading, re-fertilizing, and re-seeding which may be necessary.

3.8 ACCEPTANCE OF GRASS

A. GENERAL

1. In order to receive a Certificate of Substantial Completion, Contractor shall establish an acceptable and satisfactory stand of grass at all seeded areas.

2. Engineer will have final authority on the acceptance of grassed areas and the determination of an acceptable and satisfactory stand of grass. To be acceptable, all areas of grass shall be well-rooted, thick in growth, uniformly healthy in color, texture, and growth pattern, and shall meet the following criteria:

i. No bare spots,

ii. No annual, perennial, or noxious weeds shall be evident.

B. INSPECTIONS

1. After the establishment of a stand of grass within the areas indicated on the Drawings, Contractor shall make a written request to Engineer for a formal inspection of the Work. If grass and workmanship are acceptable upon inspection, written notice will be given to Contractor stating that the work has received Final Acceptance.

2. If the inspection identifies deficiencies, Contactor shall be responsible for addressing them at no additional cost to the Owner. The Engineer will re-inspect the repaired areas upon written request by the Contractor.

3.9 INSTALLATION OF ASHPALT CURBING

A. Asphalt curbing shall be installed on the south side of Brooklyn Street at the toe of newly loamed slopes as depicted on the Drawings.

B. Prior to installation, the edge of Brooklyn Street shall be sawcut to form a straight and vertical edge.

C. Asphalt curbing shall be installed on a 12-inch thick lift of Processed Gravel. Prior to placement of the Processed Gravel, the subgrade shall be compacted under the observation of the Engineer.

D. Processed Gravel shall be compacted to meet the density requirements specified in Section 31 00 00 – Earthwork.

E. The face of the asphalt curbing shall abut the edge of the pavement for Brooklyn Street. A tack coat shall be applied to the edge of pavement for Brooklyn Street prior to installation of the curbing.

F. Asphalt curbing shall be a minimum of 7-inches wide at the base and 4-inches in height on the back side of the curbing.

G. Asphalt curbing shall be placed mechanically. Hand placement of asphalt curbing will not be permitted.

END OF SECTION

DIVISION 40
PROCESS INTEGRATION

SECTION 40 05 59 -SLIDE GATE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Related Sections

B. Description

C. Field Measurements

D. Location and Storage of Materials

E. Submittals

1.2 RELATED SECTIONS

A. Section 01 11 00 - Summary of Work

B. Section 01 33 00 - Submittal Procedures

C. Section 01 35 29 – Health, Safety, and Emergency Response Procedures for Contaminated Sites

D. Section 01 50 10 – Temporary Water Control

E. Section 01 57 13 – Temporary Erosion and Sediment Control

F. Section 01 66 00 – Product Storage and Handling Requirements

G. Section 03 30 00 – Reinforced Cast In Place Concrete

H. Section 04 05 00 – Repair of Stone Masonry Walls

I. Section 05 30 00 – Metal Decking

J. Section 05 52 13 – Pipe and Tube Railings

1.3 DESCRIPTION

A. The Work of this Section includes the furnishing of all labor, tools, equipment, and materials necessary for the installation of an operable and water tight low-level outlet slide gate at the relocated dam. The Work further includes the provision and installation of a new slide gate, stem cover, and manual operator, as shown on the Drawings.

1.4 FIELD MEASUREMENTS

A. The Contractor shall make all such measurements as necessary to establish and/or verify dimensions and elevations prior to commencement of the Work.

1.5 LOCATION AND STORAGE OF MATERIALS

A. All slide gate components shall be stored in such a manner that they will be kept safe from theft or damage in accordance with Section 01 66 00 – Product Storage and Handling Requirements. The Contractor is responsible for replacing any damage slide gate components that are damaged as a result of the Contractor's handling procedures at no additional cost to the Owner.

1.6 SUBMITTALS

A. At least 30 days prior to start of the Work associated with the new dam, Contractor shall submit the following as part of the Dam Construction Work Plan:

1. Specifications and descriptions of the slide gate and operator mechanism.

2. A plan and construction sequence for installation of the slide gate system.

PART 2 - PRODUCTS

2.1 SECTION INCLUDES

A. Gate Systems

B. Gate Operator Stems

C. Stem Covers

D. Gate Operators

2.2 GATE SYSTEMS

A. Slide gates shall be standard-type as manufactured by the Hydrogate, Steel-Fab, Whipps or Engineer approved equal. The slide gate should be designed for throttling flows.

B. The new slide gate shall meet the standards of AWWA C560.

C. Slide gate components shall be as follows:

1. Frame, Slide, Wall Thimble, Pedestal, Gear Housing, Wall Brackets, and Stem Guide Brackets: Cast iron, ASTM A126, Class B

2. Wedges and Wedge Blocks
   Bronze, ASTM B584, Alloy C862

3. Lift Nut and Stem Block
   Bronze, ASTM B584, Alloy C865

4. Seating Faces
   Bronze, ASTM B21, Alloy C48200

5. Stems and Stem Couplings
   Stainless steel, ASTM A276, Type 304

6. Fasteners
   Stainless steel, ASTM F593/F594, Alloy Group 1

7. Flush-Bottom Retainer
   Stainless Steel, ASTM A276, Type 304

D. New seals shall be Flush-Bottom Seal Neoprene, ASTM D2000

2.3 GATE OPERATOR STEMS

A. Gate operator stems shall be threaded stainless steel rods sized to provide appropriate factor of safety against forces developed during gate operation.

B. Gate operator stem guides shall be provided as recommended by the manufacturer.

2.4 STEM COVERS

A. Stem covers shall be clear plastic stem covers that will not discolor, crack or become opaque for at least 5 years after installation. The covers shall be capped, vented, and long enough to allow full travel of the gate. Stem covers shall be marked to indicate gate opening position.

2.5 GATE OPERATORS

A. Floor Stands – Cast iron secured to the floor.

B. Manual Operator – Operator shall have a declutch lever and hand wheel for manual operation. Lubrication fittings shall be provided in the gear housing to permit lubrication of all gears and bearings. A maximum effort of 40 lbs shall be required to operate the gate after it is unseated from its wedging devices.

PART 3 - EXECUTION

3.1 SECTION INCLUDES

A. Gate and Actuator Installation

B. Attachment

C. Testing

3.2 GATE AND ACTUATOR INSTALLATION

A. Install new slide gate.

B. Install new stems and operator.

C. Provide for manual operation and furnish hand crank for the operator.

3.3 ATTACHMENT

A. Use epoxy anchoring system and stainless steel anchors to secure to concrete or masonry.

3.4 TESTING

A. After installation and before the gates are put into operation, a leakage test shall be performed on the slide gate in accordance with AWWA C560, which shall define maximum permissible leakage. Excess leakage shall be reduced to this maximum by adjusting the gate and its wedges.

END OF SECTION

ATTACHMENT A
TABLES

TABLE 1
CONFIRMED ASBESTOS-CONTAINING MATERIALS
Former Amerbelle Mill
Vernon, Connecticut

MATERIAL DESCRIPTION	MATERIAL LOCATION	HAZARD	ESTIMATED QUANTITY
BUILDING NO. 1			
Roof field, dark brown/black*	Flat roof	Asbestos	1,500 SF
Transite panel*	Platform for motor at roof deck	Asbestos	100 SF
BUILDING NO. 2			
Flashing compound, black	Upper east roof, joint between Building 2 & 3	Asbestos	180 SF
BUILDING NO. 3			
Repair flashing, black*	Older roof line at windows and doors	Asbestos	40 SF
Window glazing compound, red*	First floor	Asbestos	1 Unit
Repair patch, silver*	Wood siding	Asbestos	100 SF
BUILDING NO. 4			
Window glazing compound, gray*	Throughout	Asbestos	60 Units
Roof field and flashing, black	Bridge from Building 4 to 8	Asbestos	500 SF
Window glazing compound and caulk	Bridge from Building 4 to 8	Assumed	4 Units
BUILDING NO. 5			
Bulk demolition debris consisting of roofing, window glazing, caulking, flashing, flooring, adhesives, insulation, and all other debris. Intact masonry walls and floors to remain.	Throughout	Asbestos	All
BUILDING NO. 6			
Roof field (built up), black*	Upper and middle roof	Asbestos	2,800 SF
Flashing compound, black*	Upper and middle roof	Asbestos	All
Window glazing compound*	Throughout	Asbestos	300 LF
BUILDING NO. 7			
Repair flashing, black/dark gray	Throughout	Asbestos	160 SF
Dam Control Room Debris	Throughout	Assumed	All
Roof edge flashing compound and paint, black and silver	North, joint with HVAC penthouse	Asbestos	260 SF
Interior flashing compound, black	South wall	Asbestos	200 SF
BOILER ROOM 2			
Window glazing compound, brown	Throughout	Asbestos	3 Units
Flashing compound, black	Roof	Asbestos	240 SF
BUILDING NO. 8			
Window glazing compound, beige/gray	Throughout	Asbestos	1,000 LF
BUILDING NO. 11			
Window glazing compound, gray*	Throughout	Asbestos	29 Units
Window caulk, gray*	1st and 2nd floor	Asbestos	6,000 SF
Roof field and flashing*	Throughout	Assumed	All
BUILDING NO. 12			
Window and door caulk, gray*	Throughout	Asbestos	50 Units
Exterior caulk, black*	CMU blocked window openings	Asbestos	10 Units
BUILDING NO. 13			
Window glazing compound, tan	Throughout	Asbestos	13 Units
Caulk, beige	Parking lot loading dock, garage door	Asbestos	40 LF
Transite panel, gray	Siding at silver roof	Asbestos	1,500 SF
Roof field (built-up), black	Top roof under EPDM	Asbestos	200 SF
Roof flashing and repair compound, black/silver	Pitched roof	Asbestos	1,000 SF
BUILDING NO. 14			
Window glazing compound, white/beige	Loading dock, top of wall	Asbestos	2 Units
Window caulk, white	Second floor at exterior walls	Asbestos	12 Units
Door caulk, white and beige	Exterior doors	Asbestos	6 Units
Window caulk, tan/gray	Exterior, stairwell windows	Asbestos	200 LF
Window glazing, white	Exterior garage, side loading door	Asbestos	40 LF
Flashing, black	Blue vents	Asbestos	35 LF
Roof edge and penetration flashing, black	West loading dock roof	Asbestos	200 SF
Roof flashing, black	Under EPDM main roof and stairwell roof	Asbestos	1,400 SF
Duct flashing and wrap, black	Duct work on roof	Asbestos	400 SF
Building seam caulk, gray	North side, joint with Building 12	Asbestos	40 LF
Penetration compound, black/silver	West roof, throughout	Asbestos	200 SF
Edge flashing compound, black	West roof, (north, south, and west edge)	Asbestos	700 SF
Duct seam sealant, gray	West roof, metal duct	Asbestos	140 LF
Membrane seam sealant, black	East roof, throughout	Asbestos	6,500 LF
Duct seam sealant, silver	East roof, metal duct jacket	Asbestos	300 LF
Penetration compound, black	East roof, throughout	Asbestos	100 SF

TABLE 1
CONFIRMED ASBESTOS-CONTAINING MATERIALS
Former Amerbelle Mill
Vernon, Connecticut

MATERIAL DESCRIPTION	MATERIAL LOCATION	HAZARD	ESTIMATED QUANTITY
COURTYARD AT RACEWAY			
Window glazing compound, beige	Control Room	Asbestos	3 Units
Transite, green	Door at tank pad	Asbestos	1 Unit
AST BUILDING			
Flashing compound, black	Roof penetrations	Asbestos	120 SF
SKYWAY OVER BROOKLYN STREET			
Roof field and flashing*	Throughout	Assumed	All

NOTES:
LF = Linear Feet, SF = Square Feet
* Material only requires removal if impacted by weatherproofing activities.

This summary includes the location, material type, and approximate quantities of accessible asbestos identified in the Site buildings as a result of analytical testing. Quantities of materials were assessed by a non-calibrated wheeled tape measure or visual estimation and should be considered as approximate values. It should be noted that these are only estimates, and are based on limited visual observations of accessible areas of the site. CONTRACTOR is responsible for confirming quantities of all asbestos to be removed from the site structures.

TABLE 1A - CONTINGENCY BID ITEMS
CONFIRMED ASBESTOS-CONTAINING MATERIALS
Former Amerbelle Mill
Vernon, Connecticut

MATERIAL DESCRIPTION	MATERIAL LOCATION	HAZARD	ESTIMATED QUANTITY
BUILDING NO. 1			
Pile of windows	Basement	Asbestos	6 Units
Cementitious panel	Center room, ceiling	Asbestos	100 SF
Flange and rope gaskets	Throughout	Assumed	All
Electrical boxes, switches, and buss bars (no wire)	Throughout	Assumed	All
BUILDING NO. 3			
Sheet flooring and associated mastic	Men's bathroom - 1st floor at elevator	Asbestos	100 SF
Cementitious panels	5 floors at staircase	Asbestos	2,400 SF
Black sealer	On CMU blocks (blocking window) and basement south wall	Asbestos	400 SF
Sheet flooring and associated mastic	Bathroom - 2nd floor	Asbestos	10 SF
Flange and rope gaskets	Throughout	Assumed	All
Electrical boxes, switches, and buss bars (no wire)	Throughout	Assumed	All
BUILDING NO. 4			
Cementitious panel	Staircase	Asbestos	400 SF
Pipe insulation and associated debris	Throughout	Asbestos	200 LF
Flange and rope gaskets	Throughout	Assumed	All
Electrical boxes, switches, and buss bars (no wire)	Throughout	Assumed	All
BUILDING NO. 9			
Cementitious panels	Stairwells on all floors	Asbestos	2,200 SF
Brown-green tile flooring and mastic (multiple layers)	Building 9 meets Building 11, 1st floor at offices and bath	Asbestos	1,000 SF
Lab counter top	Attic	Asbestos	10 SF
Flange and rope gaskets	Throughout	Assumed	All
Electrical boxes, switches, and buss bars (no wire)	Throughout	Assumed	All
BUILDING NO. 11			
Cementitious panels	Stairwell and associated closets	Asbestos	750 SF
Brown-green tile flooring and mastic (multiple layers)	1st and 2nd floor	Asbestos	6,000 SF
Flange and rope gaskets	Throughout	Assumed	All
Electrical boxes, switches, and buss bars (no wire)	Throughout	Assumed	All
BUILDING NO. 12			
9x9 tile flooring (green and black)	1st floor storage	Asbestos	600 SF
Flange and rope gaskets	Throughout	Assumed	All
Electrical boxes, switches, and buss bars (no wire)	Throughout	Assumed	All
SKYWAY			
Flange and rope gaskets	Throughout	Assumed	All
Electrical boxes, switches, and buss bars (no wire)	Throughout	Assumed	All

NOTES:
1. LF = Linear Feet, SF = Square Feet

This summary includes the location, material type, and approximate quantities of accessible asbestos identified in the Site buildings as a result of analytical testing. Quantities of materials were assessed by a non-calibrated wheeled tape measure or visual estimation and should be considered as approximate values. It should be noted that these are only estimates, and are based on limited visual observations of accessible areas of the site. CONTRACTOR is responsible for confirming quantities of all asbestos to be removed from the site structures.

TABLE 2
HAZARDOUS MATERIALS INVENTORY
Former Amerbelle Mill
Vernon, Connecticut

MATERIAL DESCRIPTION	HAZARD	ESTIMATED QUANTITY	NOTES
EXTERIOR			
Fluorescent light tube	Mercury	12 tubes	
Fluorescent light ballast	Oils/PCBs/DEHP	6 units	
Halogen light bulb	Iodine/Bromine	10 units	
Sodium vapor/Mercury vapor bulb	Mercury	10 bulbs	
Compact fluorescent light bulb	Mercury	10 bulbs	
Transformer (roof mounted on west end of Skyway #2)	PCBs	1 unit	

NOTES:
1. LF = Linear Feet, SF = Square Feet, CF = Cubic Feet, N/A = Not Available

2. This summary includes the location, material type, and approximate quantities of accessible hazardous materials identified in the site building by GZA. Quantities of materials were assessed by visual estimation and should be considered as approximate values. It should be noted that these are only estimates, and are based on limited visual observations of accessible areas of the Site. The Contractor is responsible for identifying and confirming quantities of all hazardous materials to be removed from the Site structures.

TABLE 3
WINDOW, DOOR, AND ROOF WEATHERPROOFING INVENTORY
Former Amerbelle Mill
Vernon, Connecticut

LOCATION	ESTIMATED EXISTING EXTERIOR WINDOW QUANTITY	ESTIMATED EXISTING EXTERIOR DOOR QUANTITY	ESTIMATED ROOF SYSTEM REPAIR (square feet)
Building 1	5	0	500
Building 3	3	2	200
Building 4	13	1	400
Building 6 (Boiler Room)	9	1	300
Building 9	5	0	300
Building 11	32	0	700
Building 12	42	0	50
Skyway 1	4	0	50

NOTES:
1. This summary includes the location and approximate quantities of accessible windows, doors and roofing systems identified at the site by GZA. Quantities of materials were assessed by visual estimation and should be considered as approximate values. It should be noted that these are only estimates, and are based on limited visual observations of accessible areas of the Site. The Contractor is responsible for identifying and confirming quantities in this inventory table.

ATTACHMENT B
CONTRACT DRAWINGS

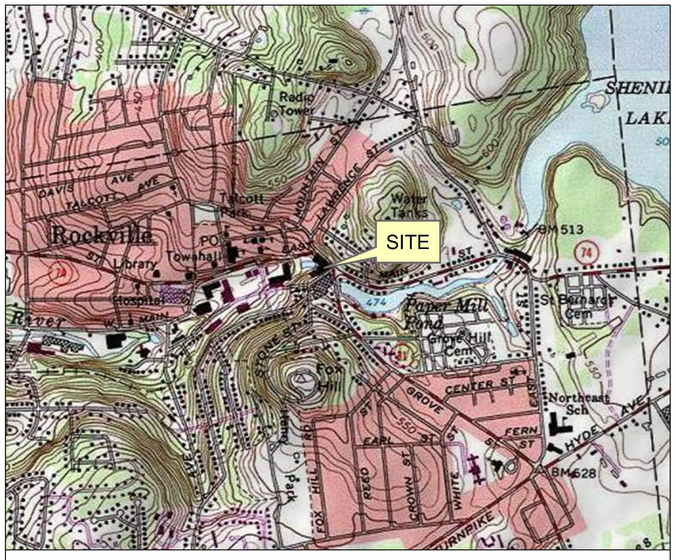
FORMER AMERBELLE MILL - PHASE 2

104 EAST MAIN STREET AND 5 BROOKLYN STREET

VERNON, CONNECTICUT

PREPARED BY:

GZA
GeoEnvironmental, Inc.
Engineers and Scientists



SITE LOCUS

0 500' 1000' 2000' 3000' 4000'

SCALE: 1" = 1000' (APPROX.)

BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
ROCKVILLE, CONNECTICUT 1997

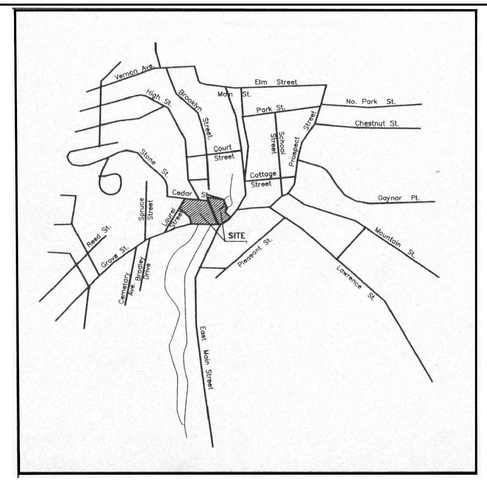
DIGITAL TOPOGRAPHIC MAPS PROVIDED BY USGSSTORE.GOV.

CONTOUR ELEVATIONS REFERENCE NAVD 88.
CONTOURS ARE SHOWN IN FEET AT 10 FOOT INTERVALS

INDEX OF FIGURES

PROJECT NO.
05.0045441.04

FIGURE NO.
1



LOCUS MAP
NOT TO SCALE

N

LEGEND

- PROPERTY BOUNDARY
- OVERHEAD DOOR
- FENCE
- SANITARY SEWER LINE
- WATER LINE
- OVERHEAD ELECTRIC UTILITY
- UTILITY POLE
- CATCH BASIN
- MANHOLE
- HYDRANT
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- BITUMINOUS CONCRETE
- CONCRETE SURFACE

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM: A COPY OF A GARDNER & PETERSON ASSOCIATES DRAWING ENTITLED "PLAN OF LAND PREPARED FOR AMERBELLE CORPORATION", DATED 3-17-95, ORIGINAL SCALE: 1"=40'; A COPY OF A FIGURE BY MACCHI ENGINEERS ENTITLED "STREET & SIDEWALK PLANS", DATED 1/4/88, ORIGINAL SCALE: 1"=20', DRAWING NO. 1; A COPY OF A DRAWING BY A. B. LOMBARDI ASSOCIATES, INC. ENTITLED "EAST STREET – EAST MAIN STREET, SANITARY SEWER REPLACEMENT", DATED APRIL 1990, ORIGINAL SCALE: 1"=40'; A COPY OF A DRAWING BY H. H. WEST, DATED 7/11/56, REVISED 11/13/85, SCALE UNKNOWN. ALL SITE FEATURE LOCATIONS ARE APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

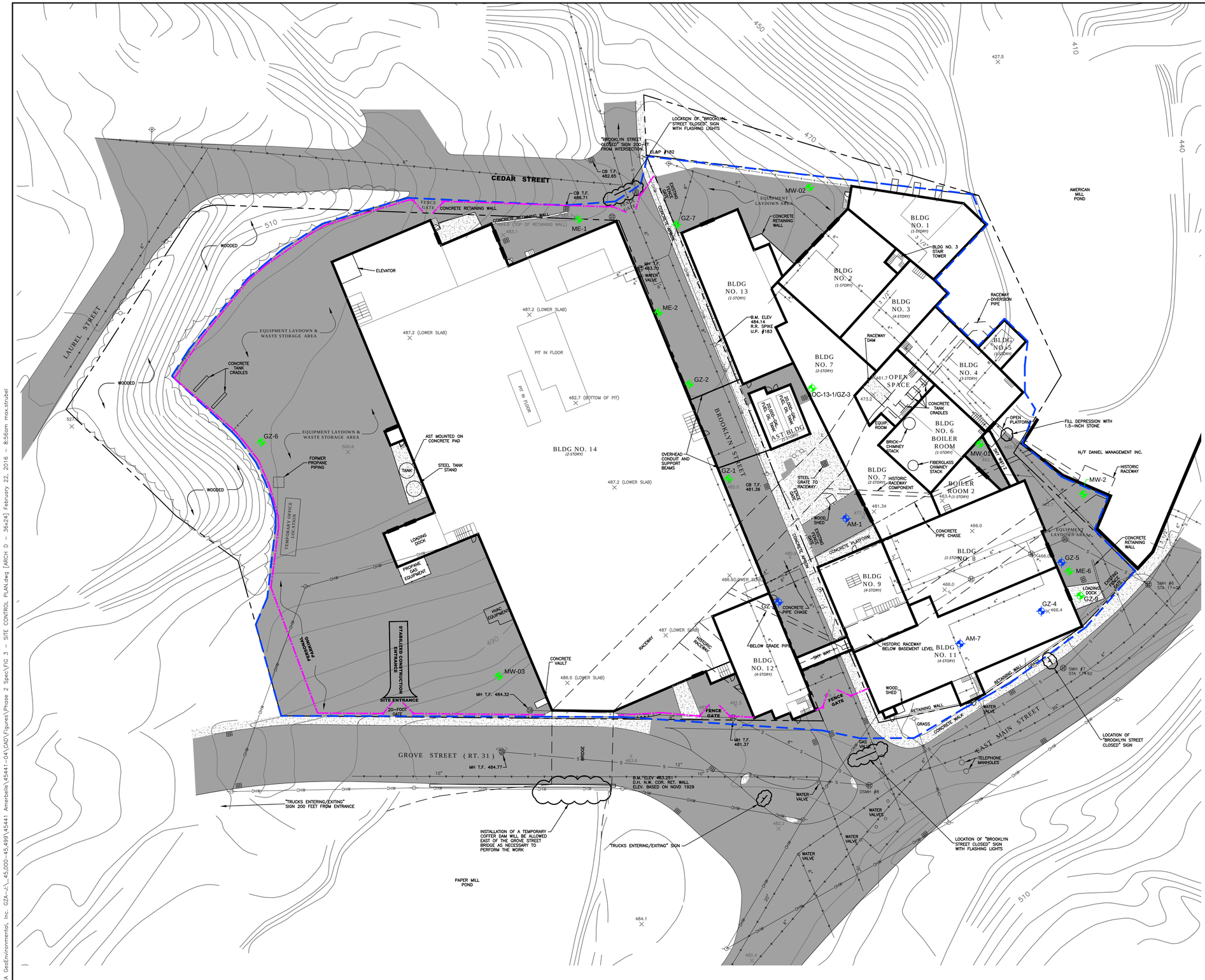
EXISTING CONDITIONS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF
VERNON, CONNECTICUT

PROJ MGR:	DJR	REVIEWED BY:	SMR	CHECKED BY:	CWC
DESIGNED BY:	CBN	DRAWN BY:	SCC	SCALE:	1" = 30'
DATE: 02-15-16		PROJECT NO. 05.0045441.04		REVISION NO.	

FIGURE
2



LEGEND

- PROPERTY BOUNDARY
- LIMITS OF WORK
- OVERHEAD DOOR
- FENCE
- 8-FOOT TEMPORARY CHAIN LINK FENCE
- SANITARY SEWER LINE
- WATER LINE
- OVERHEAD ELECTRIC UTILITY
- UTILITY POLE
- METAL UTILITY SUPPORT
- EXISTING CATCH BASIN
- MANHOLE
- HYDRANT
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- BITUMINOUS CONCRETE
- CONCRETE SURFACE

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM: A COPY OF A GARDNER & PETERSON ASSOCIATES DRAWING ENTITLED "PLAN OF LAND PREPARED FOR AMBERBELLE CORPORATION", DATED 3-17-95, ORIGINAL SCALE: 1"=40'; A COPY OF A FIGURE BY MACCHI ENGINEERS ENTITLED "STREET & SIDEWALK PLANS", DATED 1/4/88, ORIGINAL SCALE: 1"=20', DRAWING NO. 1; A COPY OF A DRAWING BY A. B. LOMBARDI ASSOCIATES, INC. ENTITLED "EAST STREET - EAST MAIN STREET, SANITARY SEWER REPLACEMENT", DATED APRIL 1990, ORIGINAL SCALE: 1"=40'; A COPY OF A DRAWING BY H. H. WEST, DATED 7/11/56, REVISED 11/13/85, SCALE UNKNOWN. ALL SITE FEATURE LOCATIONS ARE APPROXIMATE.
2. LOCATIONS OF ALL UTILITIES AND SITE FEATURES ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY LOCATIONS OF UTILITIES AND SITE FEATURES AS NEEDED TO COMPLETE THE WORK.
3. THIS DRAWING DOES NOT DEPICT ALL TRENCHES, PITS, AND CHASES WITHIN THE SLABS OF THE BUILDINGS.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF EXISTING FENCING AND GATES TO MAINTAIN A SECURE SITE.
5. CONTRACTOR TO REPAIR, UTILIZE, AND MAINTAIN EXISTING SITE FENCING THROUGHOUT SITE ACTIVITIES. CONTRACTOR TO INSTALL ADDITIONAL SITE PERIMETER FENCING AND GATES AS SHOWN PRIOR TO THE START OF DEMOLITION AND RELATED WORK.
6. SECTIONS OF 8-FOOT TEMPORARY CHAIN LINK FENCE IN SAME LOCATION AS 6-FOOT PERMANENT CHAIN LINK FENCE TO BE INSTALLED AS SHOWN ON FIGURE 7 DO NOT NEED TO BE INSTALLED IF PERMANENT 6-FOOT CHAIN LINK FENCING IS INSTALLED FIRST.
7. GATES TO BE LOCKED AT ALL TIMES UNLESS MANNED BY CONTRACTOR PERSONNEL. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING LOCKING GATES AS SHOWN ON THIS DRAWING AND SECURING GATES AT THE END OF EACH WORK DAY. ALL LOCKS SHALL BE KEYED ALIKE WITH KEY PROVIDED TO OWNER AND ENGINEER.
8. TEMPORARY WORK PLATFORMS AND STAGING AREAS TO BE CONSTRUCTED BY CONTRACTOR, WITHIN THE LIMITS OF WORK, AS NEEDED FOR TEMPORARY FACILITIES, UTILITIES, EQUIPMENT, MATERIAL STOCKPILES, TEMPORARY STORAGE, DEBRIS LOADING, AND BUILDING ACCESS.
9. CONTRACTOR SHALL PROTECT ALL EXISTING OVERBURDEN AND BEDROCK MONITORING WELLS.

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

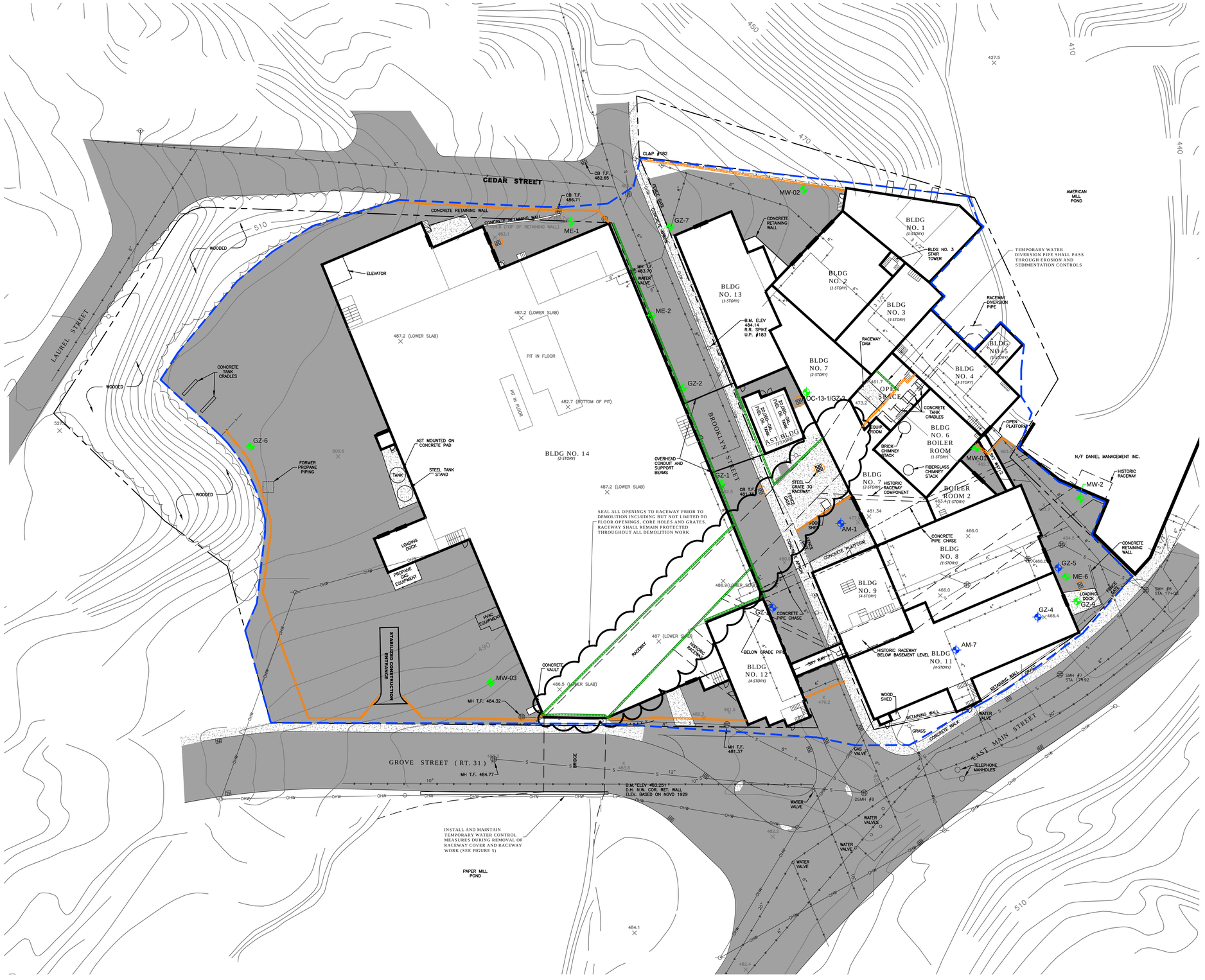
SITE CONTROL PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF VERNON, CONNECTICUT

PROJ MGR:	DJR	REVIEWED BY:	SMR	CHECKED BY:	SMR
DESIGNED BY:	CBN	DRAWN BY:	SCC	SCALE:	1" = 30'
DATE:	02-15-16	PROJECT NO.	05.0045441.04	REVISION NO.	

FIGURE 3



LEGEND

- PROPERTY BOUNDARY
- LIMITS OF WORK
- OVERHEAD DOOR
- FENCE
- PROPOSED PHASE 1 EROSION CONTROLS (HAYBALES WITH BURLAP IN PAVED AREAS AND HAYBALES WITH SILT FENCE IN LANDSCAPED AREAS)
- PROPOSED PHASE 2 EROSION CONTROLS (HAYBALES WITH BURLAP IN PAVED AREAS AND HAYBALES WITH SILT FENCE IN LANDSCAPED AREAS)
- SANITARY SEWER LINE
- WATER LINE
- OVERHEAD ELECTRIC UTILITY
- UTILITY POLE
- EXISTING CATCH BASIN
- EXISTING CATCH BASIN WITH SILT SACK – STRUCTURES TO BE PROTECTED THROUGHOUT DEMOLITION (PHASES 1 AND 2)
- MANHOLE
- HYDRANT
- METAL UTILITY SUPPORT
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- BITUMINOUS CONCRETE
- CONCRETE SURFACE

NOTES:

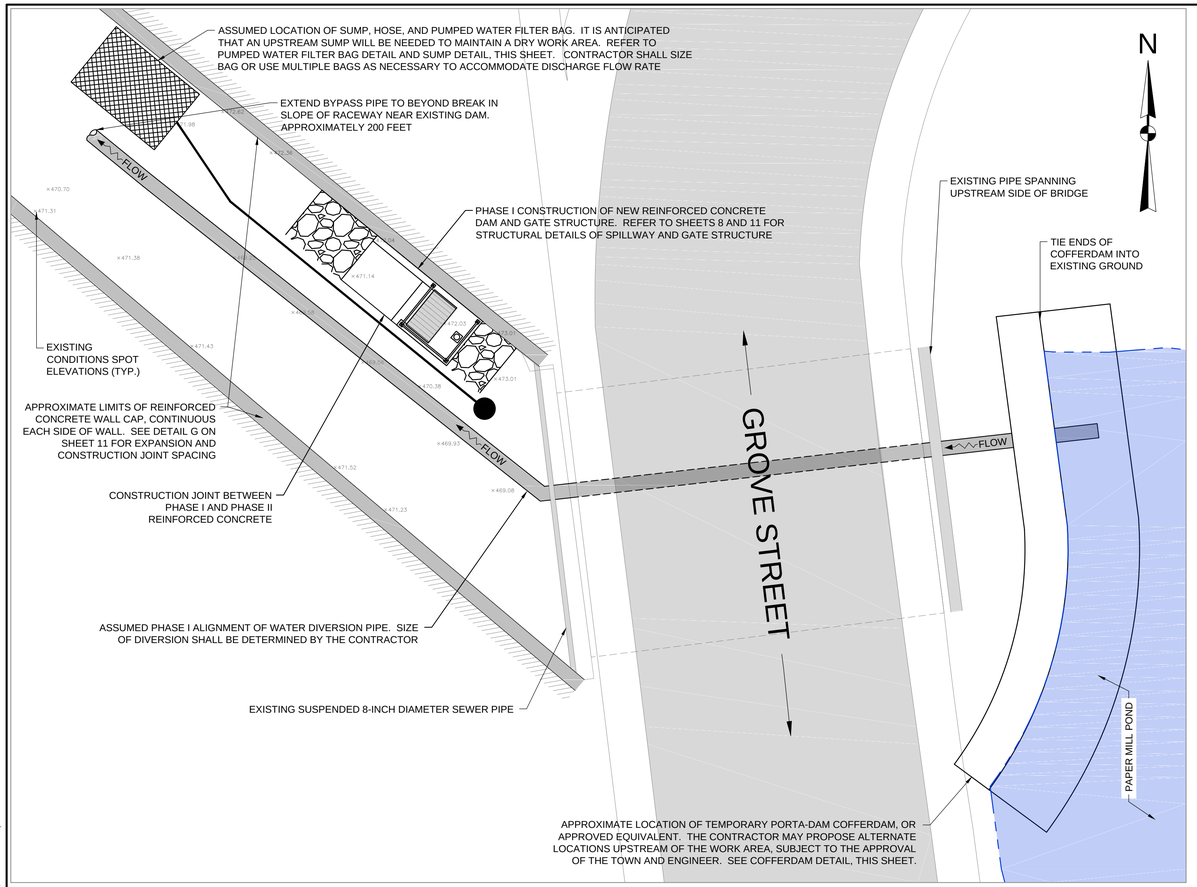
1. THE BASE MAP WAS DEVELOPED FROM: A COPY OF A GARDNER & PETERSON ASSOCIATES DRAWING ENTITLED "PLAN OF LAND PREPARED FOR AMERBELLE CORPORATION", DATED 3-17-95, ORIGINAL SCALE: 1"=40'; A COPY OF A FIGURE BY MACCHI ENGINEERS ENTITLED "STREET & SIDEWALK PLANS", DATED 1/4/88, ORIGINAL SCALE: 1"=20', DRAWING NO. 1; A COPY OF A DRAWING BY A. B. LOMBARDI ASSOCIATES, INC. ENTITLED "EAST STREET – EAST MAIN STREET, SANITARY SEWER REPLACEMENT", DATED APRIL 1990, ORIGINAL SCALE: 1"=40'; A COPY OF A DRAWING BY H. H. WEST, DATED 7/11/56, REVISED 11/13/85, SCALE UNKNOWN. ALL SITE FEATURE LOCATIONS ARE APPROXIMATE.
2. LOCATIONS OF ALL UTILITIES AND SITE FEATURES ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY LOCATIONS OF UTILITIES AND SITE FEATURES AS NEEDED TO COMPLETE THE WORK.
3. THIS DRAWING DOES NOT DEPICT ALL TRENCHES, PITS, AND CHASES WITHIN THE SLABS OF THE BUILDINGS.
4. PHASE 1 EROSION CONTROLS AND STABILIZED CONSTRUCTION ENTRANCE TO BE INSTALLED PRIOR TO THE START OF UTILITY CUT AND CAPS AND DEMOLITION ACTIVITIES.
5. PHASE 2 EROSION CONTROLS TO BE INSTALLED PRIOR TO THE START OF CONCRETE SLAB, FOUNDATION, AND RACEWAY TOP/COVER REMOVAL ACTIVITIES.

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

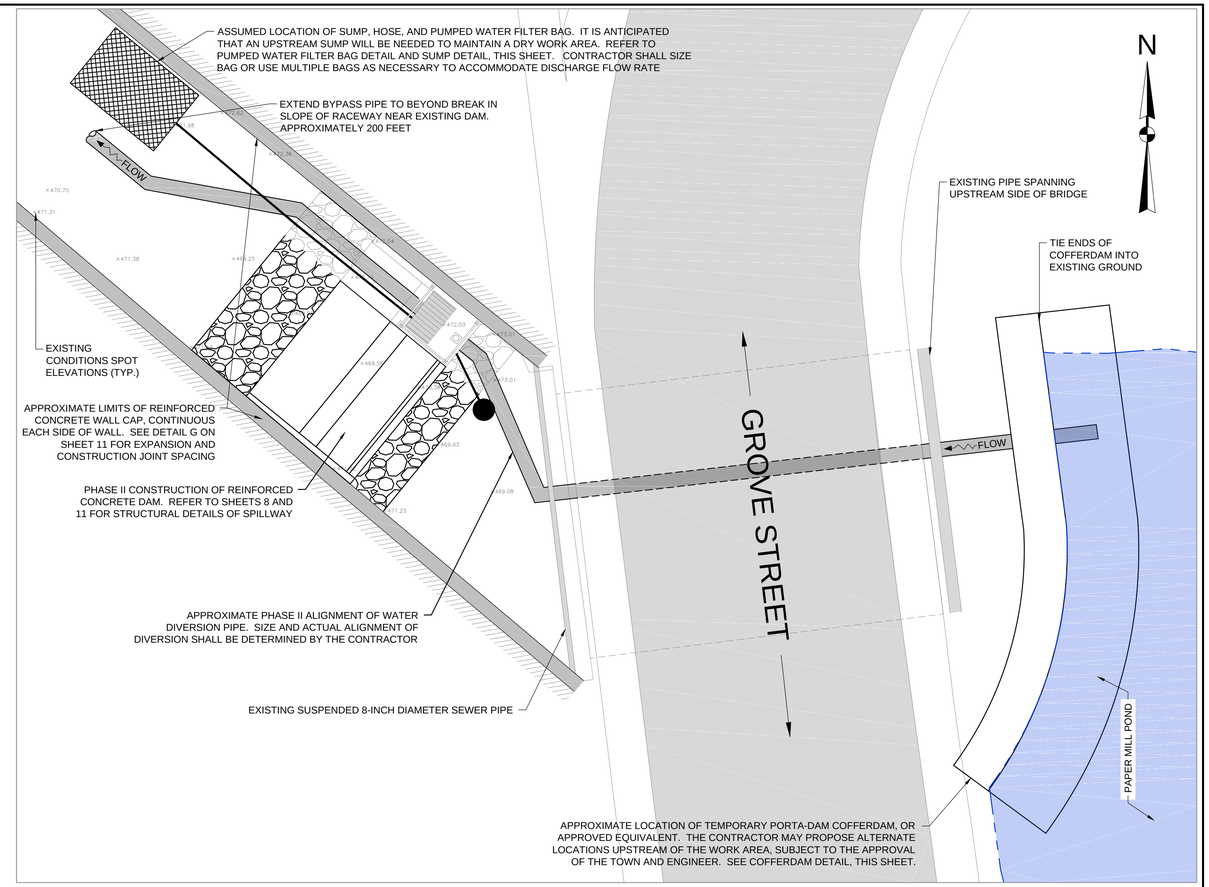
EROSION AND SEDIMENTATION CONTROL PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: THE TOWN OF VERNON, CONNECTICUT	
PROJ MGR: DJR	REVIEWED BY: SMR	CHECKED BY: SCC	FIGURE 4
DESIGNED BY: SCC	DRAWN BY: SCC	SCALE: 1" = 30'	
DATE: 02-15-16	PROJECT NO. 05.0045441.04	REVISION NO.	



PHASE I - SCHEMATIC WATER CONTROL AND CONSTRUCTION PHASING PLAN

NOT TO SCALE



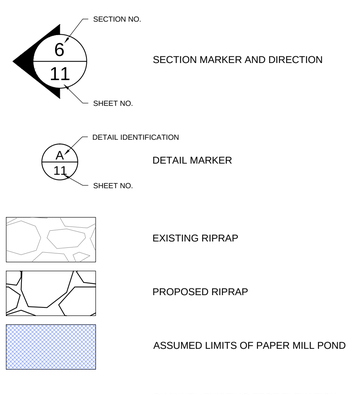
PHASE II - SCHEMATIC WATER CONTROL AND CONSTRUCTION PHASING PLAN

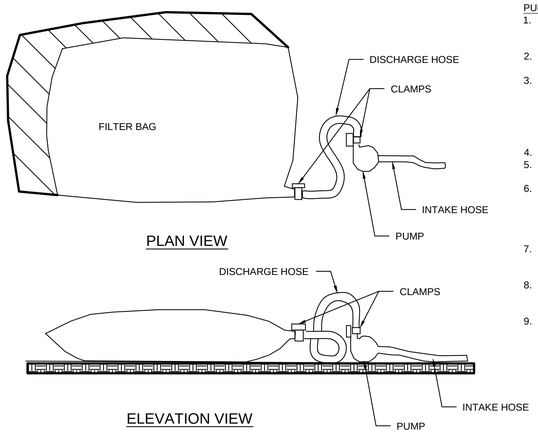
NOT TO SCALE

GENERAL CONSTRUCTION PHASING NOTES:

1. IT IS ANTICIPATED THAT THE DAM CONSTRUCTION WILL FOLLOW BUILDING DEMOLITION ACTIVITIES AT THE SITE.
2. THE DAM LOCATION IS WITHIN AN APPROXIMATELY 15 FOOT HIGH RACEWAY CHANNEL. EQUIPMENT ACCESS WILL LIKELY BE LIMITED.
3. THE CONTRACTOR SHALL ENSURE EQUIPMENT, MATERIALS, OR OTHER LOADS DO NOT DAMAGE THE EXISTING WALLS OR CAUSE THEM TO BECOME UNSTABLE.

LEGEND



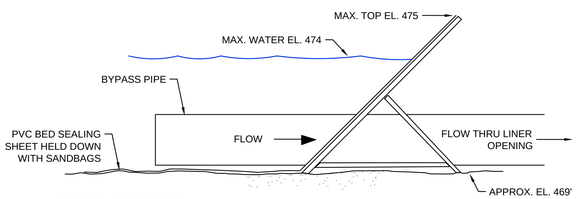


PUMPED WATER FILTER BAG DETAIL

NOT TO SCALE

PUMPED WATER FILTER BAG NOTES:

1. CONTRACTOR SHALL LOCATE FILTER BAG TO COMPLY WITH REQUIREMENTS BELOW. LOCATION IS SUBJECT TO APPROVAL BY THE ENGINEER.
2. FILTER BAGS SHALL BE USED TO FILTER WATER PUMPED FROM DISTURBED AREAS PRIOR TO DISCHARGING.
3. FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. CONTRACTOR SHALL PROVIDE A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY (FOR DISPOSAL PURPOSES).
4. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL.
5. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
6. BAGS SHALL BE LOCATED IN THE RACEWAY CHANNEL DOWNSTREAM OF THE WORK AREA. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PLACE STONE TO PROVIDE A STABLE LOCATION FOR THE FILTER BAG.
7. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
8. THE PUMPING RATE SHALL BE NO GREATER THAN 100 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
9. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.



OPTIONAL ATTACHMENTS:
- BACK BRACE POLE
- HORIZONTAL, ADDITIONAL BRACING
- SINGLE FRAME ATTACHMENTS FOR IRREGULAR CONTOURS

PHASE 1: OUTLET BY-PASS PIPES SUCH THAT BY-PASS FLOW IS ROUTED THROUGH LEFT SIDE OF CHANNEL

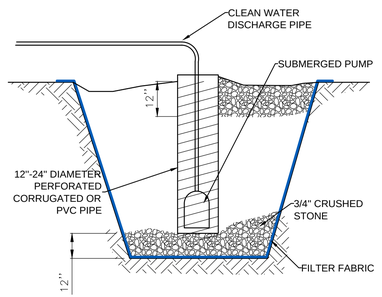
PHASE 2: OUTLET BY-PASS PIPES SUCH THAT BY-PASS FLOW IS ROUTED THROUGH NEWLY CONSTRUCTED LOW-LEVEL OUTLET GATE

NOTES:

1. OTHER COFFERDAM SYSTEMS (i.e. WATER FILLED BLADDER, SAND FILLED SUPER SACKS, OR SIMILAR SYSTEMS) MAY BE USED PROVIDED THEY HAVE EQUAL OR LESSER TEMPORARY IMPACTS TO WETLANDS RESOURCES AND ARE APPROVED FOR USE BY THE ENGINEER.
2. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT TO DESIGN AND STAMP THE TEMPORARY COFFERDAM PROPOSED FOR USE IN THE WORK AT NO ADDITIONAL COST TO THE OWNER.

SCHEMATIC COFFERDAM DETAIL

NOT TO SCALE



DEWATERING SUMP DETAIL

NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

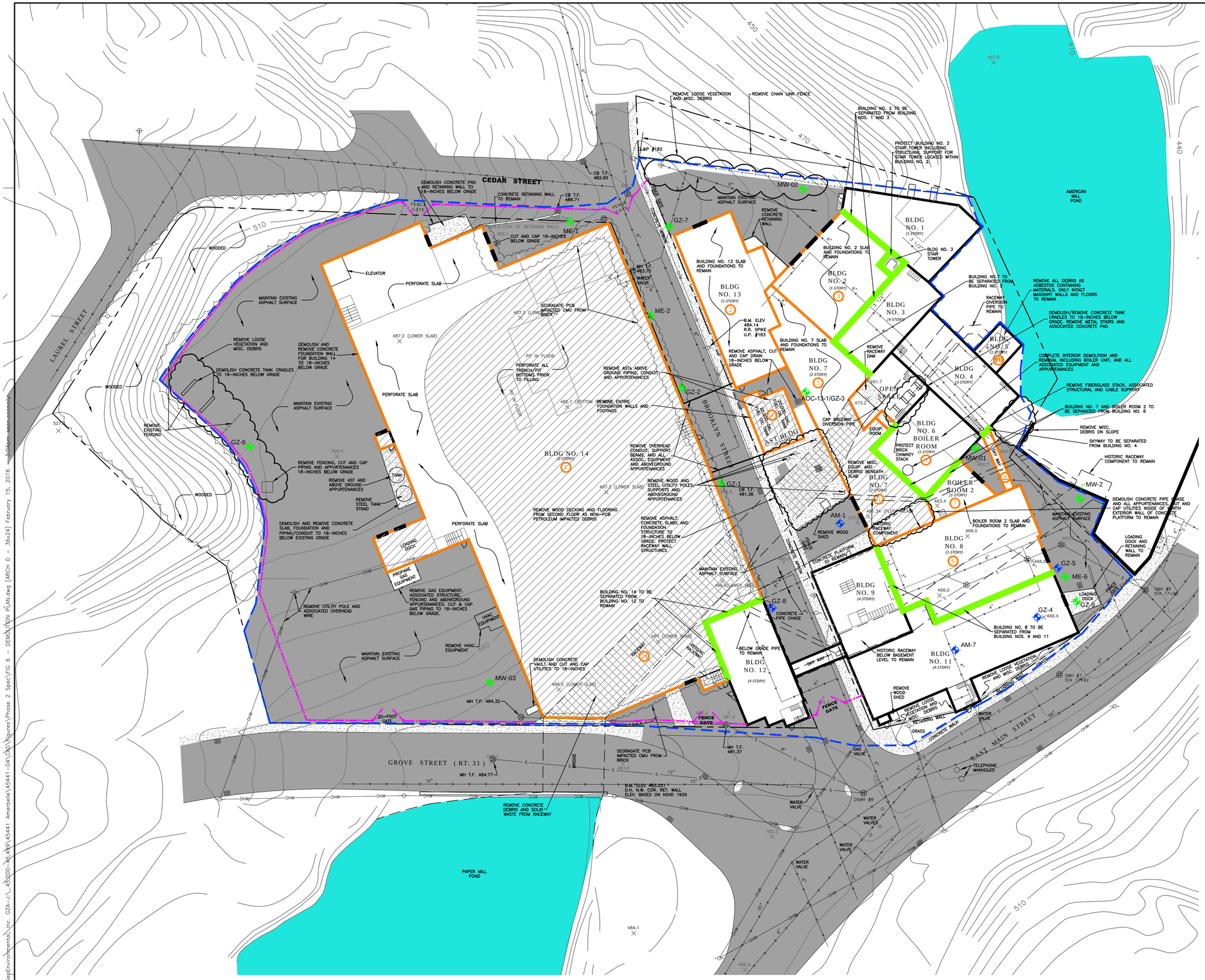
CONSTRUCTION PHASING AND WATER CONTROL PLAN
DAM

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF
VERNON, CONNECTICUT

PROJ MGR:	CBN	REVIEWED BY:	PHB	CHECKED BY:	CWC
DESIGNED BY:	CBN	DRAWN BY:	CBN	SCALE:	AS NOTED
DATE:	2-12-2016	PROJECT NO.	05.0045441.05	REVISION NO.	

FIGURE 5



0 15 30 60 90

SCALE IN FEET

N

LEGEND

- PROPERTY BOUNDARY
- LIMITS OF WORK
- BUILDING SCHEDULED FOR DEMOLITION
- OVERHEAD DOOR
- FENCE
- TEMPORARY 6-FOOT CHAIN LINK FENCE
- SANITARY SEWER LINE
- WATER LINE
- OVERHEAD ELECTRIC UTILITY
- UTILITY POLE
- METAL UTILITY SUPPORT
- CATCH BASIN
- MANHOLE
- HYDRANT
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- BITUMINOUS CONCRETE
- CONCRETE SURFACE
- REMOVE CONCRETE BUILDING SLAB
- REMOVE RACEWAY CONCRETE TOP/COVER
- LOCATION OF BUILDING SEPARATIONS TO BE COMPLETED
- WORK SEQUENCE

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM: A COPY OF A GARDNER & PETERSON ASSOCIATES DRAWING ENTITLED "PLAN OF LAND PREPARED FOR AMBERBELLE CORPORATION", DATED 3-17-95, ORIGINAL SCALE: 1"=40'; A COPY OF A FIGURE BY MACCHI ENGINEERS ENTITLED "STREET & SIDEWALK PLANS", DATED 1/4/88, ORIGINAL SCALE: 1"=20', DRAWING NO. 1; A COPY OF A DRAWING BY A. B. LOMBARDI ASSOCIATES, INC. ENTITLED "EAST STREET – EAST MAIN STREET, SANITARY SEWER REPLACEMENT", DATED APRIL 1990, ORIGINAL SCALE: 1"=40'; A COPY OF A DRAWING BY H. H. WEST, DATED 7/11/56, REVISED 11/13/85, SCALE UNKNOWN. ALL SITE FEATURE LOCATIONS ARE APPROXIMATE.
2. LOCATIONS OF ALL UTILITIES AND SITE FEATURES ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY LOCATIONS OF UTILITIES AND SITE FEATURES AS NEEDED TO COMPLETE THE WORK.
3. THIS DRAWING DOES NOT DEPICT ALL TRENCHES, PITS, AND CHASES WITHIN THE SLABS OF THE BUILDINGS.
4. PROTECT ALL SITE FEATURES TO REMAIN INCLUDING BUT NOT LIMITED TO BUILDING STRUCTURES, UTILITIES, FENCING, ASPHALT SURFACES AND MONITORING WELLS. CONTRACTOR SHALL REPAIR OR REPLACE IN KIND ALL DAMAGED UTILITIES, MONITORING WELLS AND OTHER SITE FEATURES AT NO ADDITIONAL COST TO THE OWNER.
5. TEMPORARY WORK PLATFORMS AND STAGING AREAS TO BE CONSTRUCTED BY CONTRACTOR, WITHIN THE LIMITS OF WORK, AS NEEDED FOR TEMPORARY FACILITIES, UTILITIES, EQUIPMENT, MATERIAL STOCKPILES, DEBRIS LOADING, AND BUILDING ACCESS.
6. CONTRACTOR SHALL ONLY CLEAR AND GRUB AREAS WITHIN THE LIMITS OF WORK AS SHOWN OR AS NEEDED TO ACCESS WORK. DEBRIS SHALL BE DISPOSED OF OFF-SITE AT A FACILITY PRE-APPROVED BY OWNER.
7. PRIOR TO THE START OF DEMOLITION ACTIVITIES CONTRACTOR SHALL COMPLETE TERMINATION OF ALL UTILITIES IN ACCORDANCE WITH REQUIREMENTS OF AND COORDINATION WITH LOCAL UTILITY PROVIDERS, AND THE TOWN OF VERNON. CONTRACTOR SHALL COMPLETE REMOVAL OF ABOVEGROUND UTILITY WIRES, AND APPURTENANCES WITHIN THE LIMITS OF WORK ASSOCIATED WITH ALL TERMINATED UTILITIES.
8. PRIOR TO THE START OF DEMOLITION ACTIVITIES CONTRACTOR SHALL COMPLETE REMOVAL OF ALL ASBESTOS CONTAINING AND HAZARDOUS MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
9. CONTRACTOR IS RESPONSIBLE FOR CAPPING AND REMOVING ALL ACTIVE AND INACTIVE UTILITIES TO A MINIMUM OF 18-INCHES BELOW GROUND SURFACE, FLUSH WITH ADJACENT BUILDING WALLS TO REMAIN, OR FLUSH WITH CONCRETE SLABS TO REMAIN IN ACCORDANCE WITH SPECIFICATIONS AND DRAWINGS.
10. METHODS, EQUIPMENT, AND SEQUENCING OF BUILDING SEPARATIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACTORS APPROVED SEPARATION PLAN STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.
11. CONTRACTOR SHALL PROVIDE SHORING, BRACING, PROTECTION, OR BUILDING MODIFICATIONS AS NECESSARY FOR PROTECTION OF STRUCTURES TO REMAIN DURING BUILDING SEPARATION ACTIVITIES.
12. CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL TEMPORARY BRACING OF WALLS TO REMAIN AS NEEDED DURING AND FOLLOWING BUILDING SEPARATION ACTIVITIES.
13. ALL STRUCTURAL SUPPORT CONNECTIONS, UTILITIES AND APPURTENANCES AT BUILDING SEPARATIONS COMPLETED AS PART OF THIS DEMOLITION WORK SHALL BE CUT AND CAPPED FLUSH WITH THE BUILDING WALL TO REMAIN.
14. CONTRACTOR SHALL PROVIDE WEATHERPROOFING OF ALL NEWLY EXPOSED SURFACES FOLLOWING COMPLETION OF SEPARATION ACTIVITIES IN ACCORDANCE WITH SPECIFICATIONS AND DRAWINGS.
15. THE CONCRETE TOP/COVER FOR THE RACEWAY AND DAM SHALL BE REMOVED/DEMOLISHED AFTER DEMOLITION OF ALL BUILDINGS. WATER DIVERSION MEASURES SHALL BE INSTALLED PRIOR TO REMOVAL OF THE CONCRETE TOP/COVER AND DAM. CONCRETE TOP/COVER AND DAM SHALL BE COMPLETELY CUT AWAY AND SEPARATED FROM RACEWAY WALL PRIOR TO REMOVAL. CONTRACTOR SHALL REPAIR IN KIND ALL DAMAGE TO RACEWAY WALL CAUSED BY REMOVAL ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL REMOVE ALL DEBRIS WITHIN RACEWAY FROM TOP/COVER AND DAM DEMOLITION.
16. CONTRACTOR TO PROTECT ALL HISTORIC RACEWAY STRUCTURING AND FEATURES.

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

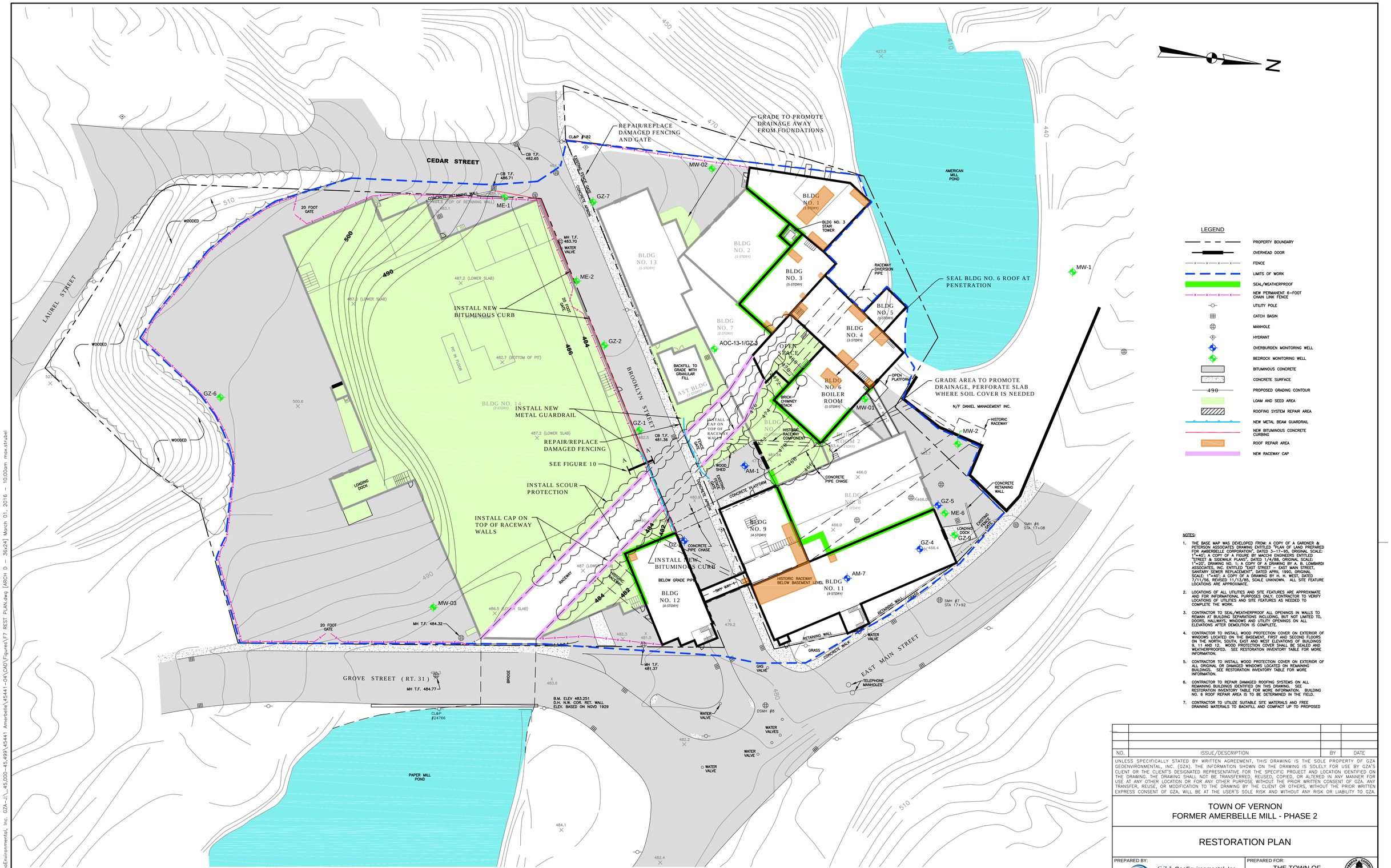
DEMOLITION PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF VERNON, CONNECTICUT

PROJ MGR:	DJR	REVIEWED BY:	SMR	CHECKED BY:	SCC
DESIGNED BY:	SCC	DRAWN BY:	SCC	SCALE:	1" = 30'
DATE:	02-15-16	PROJECT NO.	05.0045441.04	REVISION NO.	

FIGURE 6



LEGEND

- PROPERTY BOUNDARY
- OVERHEAD DOOR
- FENCE
- LIMITS OF WORK
- SEAL/WEATHERPROOF
- NEW PERMANENT 6-FOOT CHAIN LINK FENCE
- UTILITY POLE
- CATCH BASIN
- MANHOLE
- HYDRANT
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- BITUMINOUS CONCRETE
- CONCRETE SURFACE
- PROPOSED GRADING CONTOUR
- LOAM AND SEED AREA
- ROOFING SYSTEM REPAIR AREA
- NEW METAL BEAM GUARDRAIL
- NEW BITUMINOUS CONCRETE CURBING
- ROOF REPAIR AREA
- NEW RACEWAY CAP

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM: A COPY OF A GARDNER & PETERSON ASSOCIATES DRAWING ENTITLED "PLAN OF LAND PREPARED FOR AMBERBELLE CORPORATION", DATED 3-17-95, ORIGINAL SCALE: 1"=40'; A COPY OF A FIGURE BY MACCHI ENGINEERS ENTITLED "STREET & SIDEWALK PLANS", DATED 1/4/88, ORIGINAL SCALE: 1"=20', DRAWING NO. 1; A COPY OF A DRAWING BY A. B. LOMBARDI ASSOCIATES, INC. ENTITLED "EAST STREET – EAST MAIN STREET, SANITARY SEWER REPLACEMENT", DATED APRIL 1990, ORIGINAL SCALE: 1"=40'; A COPY OF A DRAWING BY H. H. WEST, DATED 7/31/06, REVISED 11/13/85, SCALE UNKNOWN. ALL SITE FEATURE LOCATIONS ARE APPROXIMATE.
2. LOCATIONS OF ALL UTILITIES AND SITE FEATURES ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY LOCATIONS OF UTILITIES AND SITE FEATURES AS NEEDED TO COMPLETE THE WORK.
3. CONTRACTOR TO SEAL/WEATHERPROOF ALL OPENINGS IN WALLS TO REMAIN AT BUILDING SEPARATIONS INCLUDING, BUT NOT LIMITED TO, DOORS, HALLWAYS, WINDOWS AND UTILITY OPENINGS ON ALL ELEVATIONS AFTER DEMOLITION IS COMPLETE.
4. CONTRACTOR TO INSTALL WOOD PROTECTION COVER ON EXTERIOR OF WINDOWS LOCATED ON THE BASEMENT, FIRST AND SECOND FLOORS ON THE NORTH, SOUTH, EAST AND WEST ELEVATIONS OF BUILDINGS 9, 11 AND 12. WOOD PROTECTION COVER SHALL BE SEALED AND WEATHERPROOFED. SEE RESTORATION INVENTORY TABLE FOR MORE INFORMATION.
5. CONTRACTOR TO INSTALL WOOD PROTECTION COVER ON EXTERIOR OF ALL ORIGINAL OR DAMAGED WINDOWS LOCATED ON REMAINING BUILDINGS. SEE RESTORATION INVENTORY TABLE FOR MORE INFORMATION.
6. CONTRACTOR TO REPAIR DAMAGED ROOFING SYSTEMS ON ALL REMAINING BUILDINGS IDENTIFIED ON THIS DRAWING. SEE RESTORATION INVENTORY TABLE FOR MORE INFORMATION. BUILDING NO. 6 ROOF REPAIR AREA IS TO BE DETERMINED IN THE FIELD.
7. CONTRACTOR TO UTILIZE SUITABLE SITE MATERIALS AND FREE DRAINING MATERIALS TO BACKFILL AND COMPACT UP TO PROPOSED

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

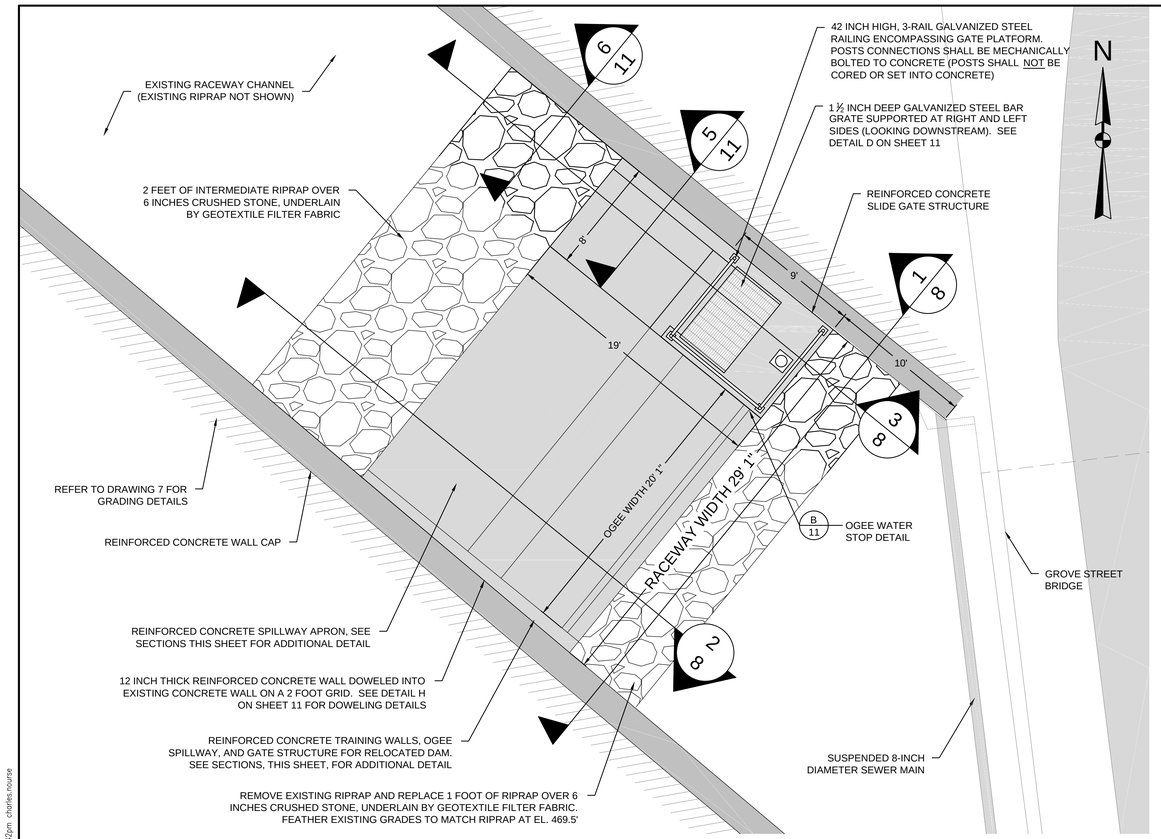
RESTORATION PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF VERNON, CONNECTICUT

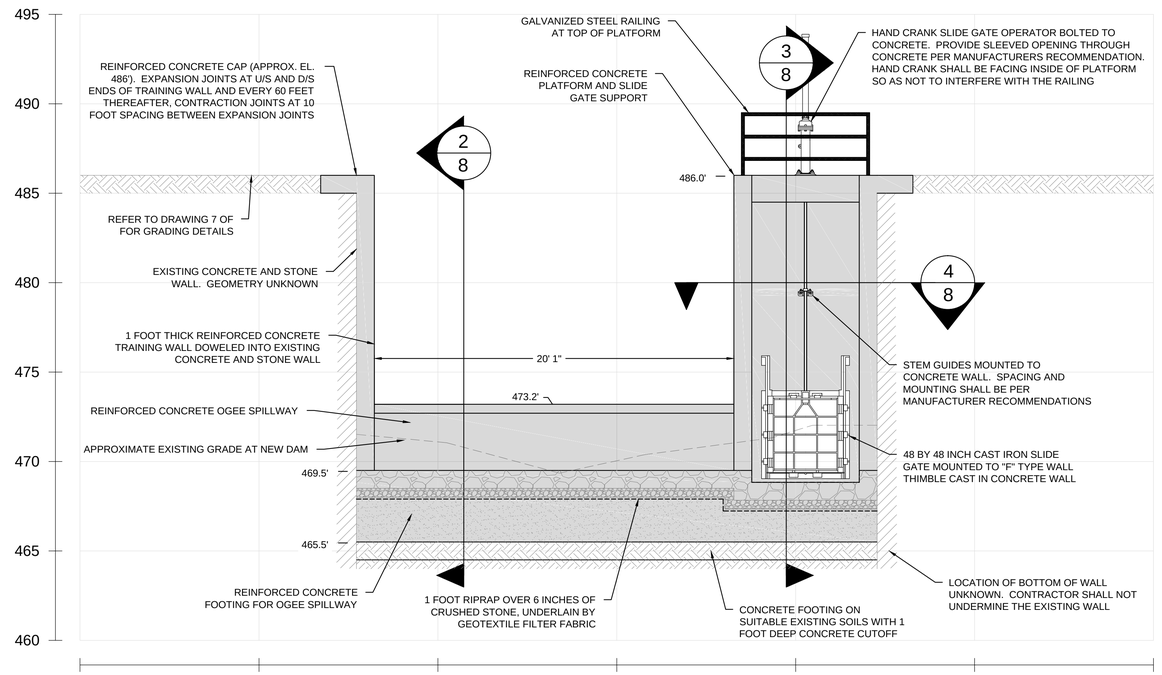
PROJ MGR:	DJR	REVIEWED BY:	SMR	CHECKED BY:	SCC
DESIGNED BY:	SCC	DRAWN BY:	SCC	SCALE:	1" = 30'
DATE:	02-15-16	PROJECT NO.	05.0045441.04	REVISION NO.	

FIGURE 7



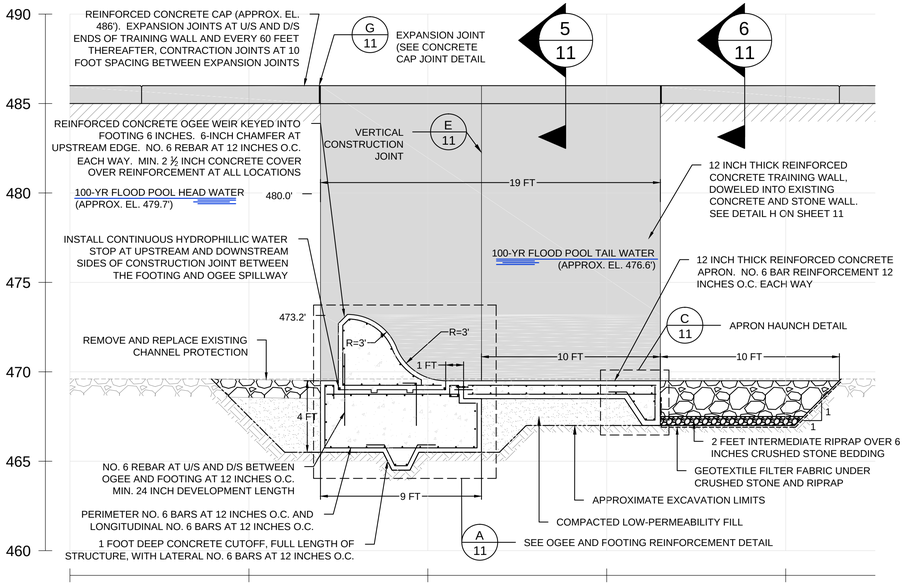
FINAL CONDITIONS PLAN VIEW OF NEW DAM STRUCTURE

0 2' 6" 5' 10'
SCALE: 1" = 5'



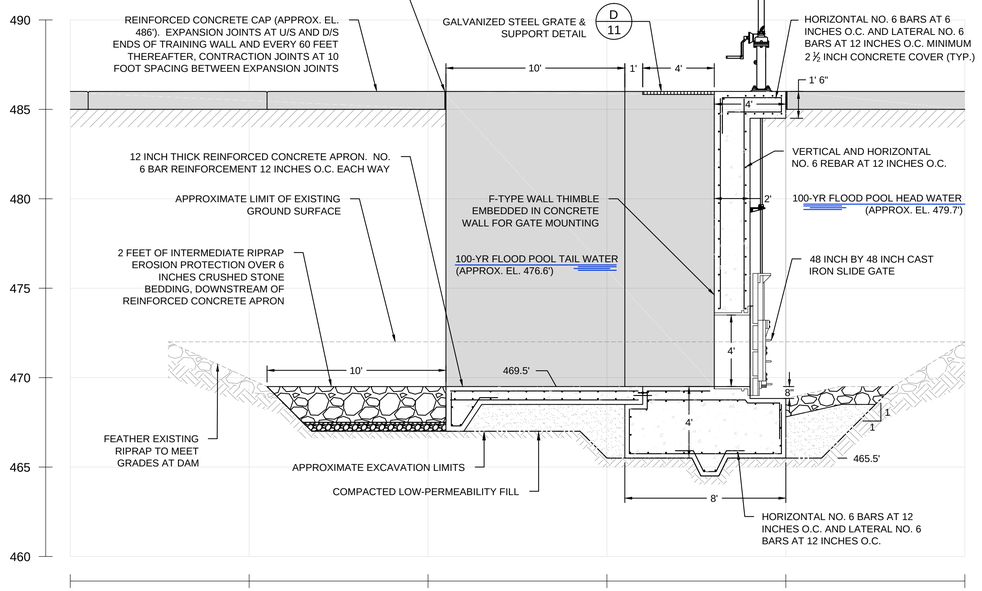
1/8 ELEVATION VIEW

0 2' 4' 8'
SCALE: 1" = 4'



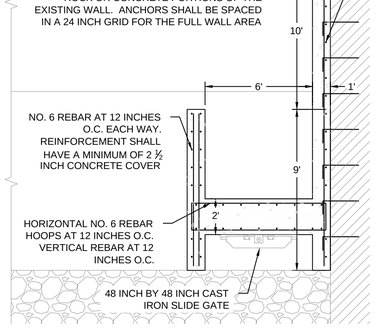
2/8 OGEE SPILLWAY SECTION VIEW

0 2' 4' 8'
SCALE: 1" = 4'



3/8 LOW-LEVEL OUTLET SECTION VIEW

0 2' 4' 8'
SCALE: 1" = 4'



4/8 LOW LEVEL OUTLET STRUCTURE SECTION VIEW

0 2' 4' 8'
SCALE: 1" = 4'

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

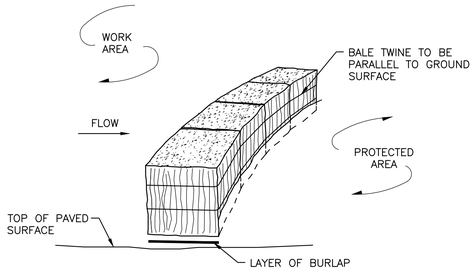
FINAL CONDITIONS AND SECTIONS DAM

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF VERNON, CONNECTICUT

PROJ MGR:	CBN	REVIEWED BY:	PHB	CHECKED BY:	CWC
DESIGNED BY:	CBN	DRAWN BY:	CBN	SCALE:	AS NOTED
DATE:	2-12-2016	PROJECT NO.	05.0045441.05	REVISION NO.	

FIGURE 8

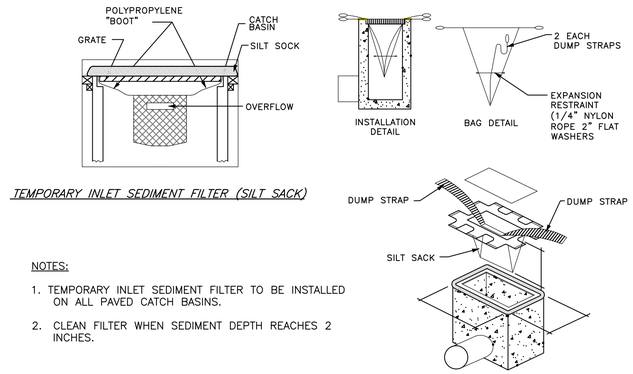


CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED WHERE SPECIFIED ON DRAWINGS IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE PLACED SO THE BINDINGS ARE HORIZONTAL.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

STRAW BALE BARRIER DETAIL (PAVED AREAS)

NOT TO SCALE



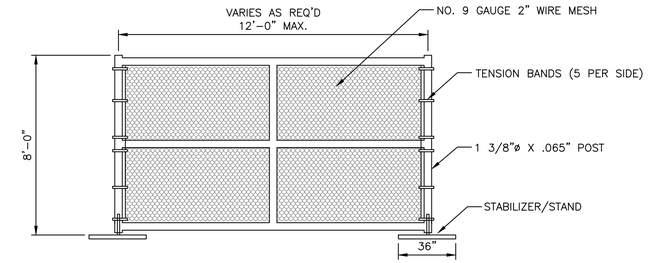
TEMPORARY INLET SEDIMENT FILTER (SILT SACK)

NOTES:

1. TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS.
2. CLEAN FILTER WHEN SEDIMENT DEPTH REACHES 2 INCHES.

SILT SACK DETAIL

NOT TO SCALE

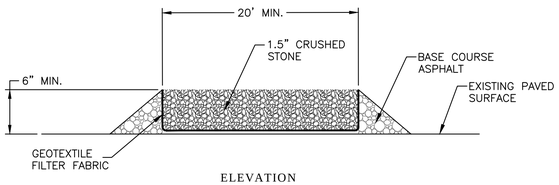


TYPICAL TEMPORARY CONSTRUCTION FENCE PANEL

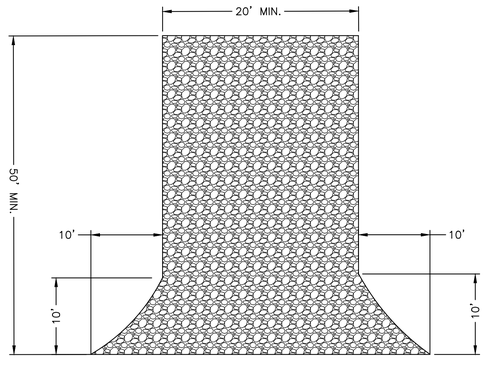
NOT TO SCALE

TEMPORARY CONSTRUCTION FENCING NOTES:

1. FENCES SHALL BE CONSTRUCTED WITH A TOP AND BOTTOM RAIL.
2. GATES MUST REMAIN IN GOOD WORKING ORDER AND MUST BE CLOSED AND SECURED DURING NON-WORKING HOURS.
3. GATES SHALL BE CONSTRUCTED SO THAT THEY SWING IN TOWARDS THE CONSTRUCTION SITE.
4. GATES MUST BE CONSTRUCTED WITH THE SAME DESIGN CHARACTERISTICS AS THE TEMPORARY CONSTRUCTION FENCE.
5. FABRIC SHALL BE ANCHORED IN EACH GROMMET WITH ALUMINUM TIES.
6. STABILIZER/STAND SHALL BE BALLASTED WITH MINIMUM TWO 50-POUND SAND BAGS



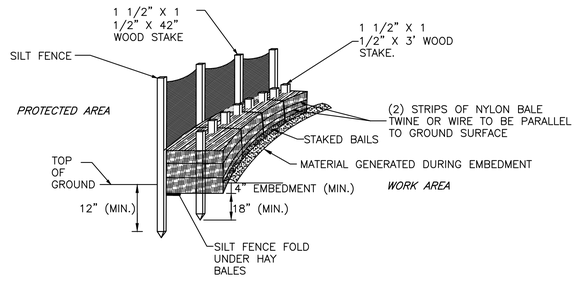
ELEVATION



PLAN

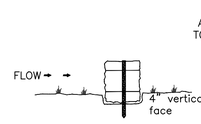
STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

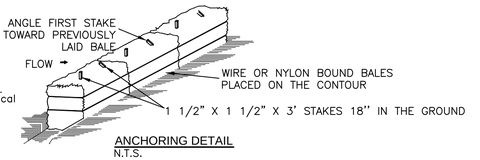


SILT FENCE / STRAW BALE INSTALLATION DETAIL (NON-PAVED AREAS)

NOT TO SCALE



EMBEDDING DETAIL
N.T.S.



ANCHORING DETAIL
N.T.S.

NOTE:

CONSTRUCTION SPECIFICATION

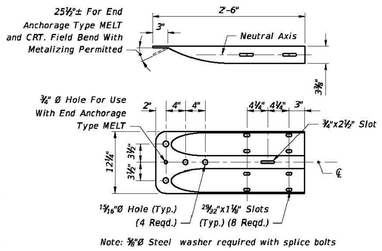
1. BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ADJOINING.
2. EACH BALE SHALL BE EMBEDDED IN THE GROUND A MINIMUM OF 4 INCHES.
3. BALES SHALL BE ANCHORED IN PLACE BY AT LEAST TWO STAKES DRIVEN THROUGH THE BALE. THE STAKES SHOULD BE DRIVEN AT LEAST 18 INCHES INTO THE GROUND.
4. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL AND PROMPTLY REPAIRED OR REPLACED AS NECESSARY.
5. BALES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED OF PROPERLY.

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

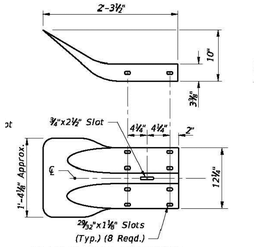
SITE CONTROL AND
EROSION AND SEDIMENTATION CONTROL DETAILS

PREPARED BY:		PREPARED FOR:		
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		THE TOWN OF VERNON, CONNECTICUT		FIGURE 9
PROJ MGR: DJR	REVIEWED BY: SMR	CHECKED BY: SCC		
DESIGNED BY: SCC	DRAWN BY: SCC	SCALE: 1" = 30'		
DATE: 02-15-16	PROJECT NO. 05.0045441.04	REVISION NO.		



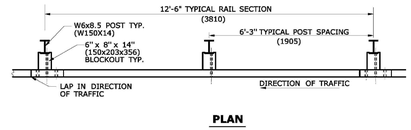
SPECIAL END SHOE FOR BUILDING NO. 12 ATTACHMENT

NOT TO SCALE



TERMINAL ELEMENT

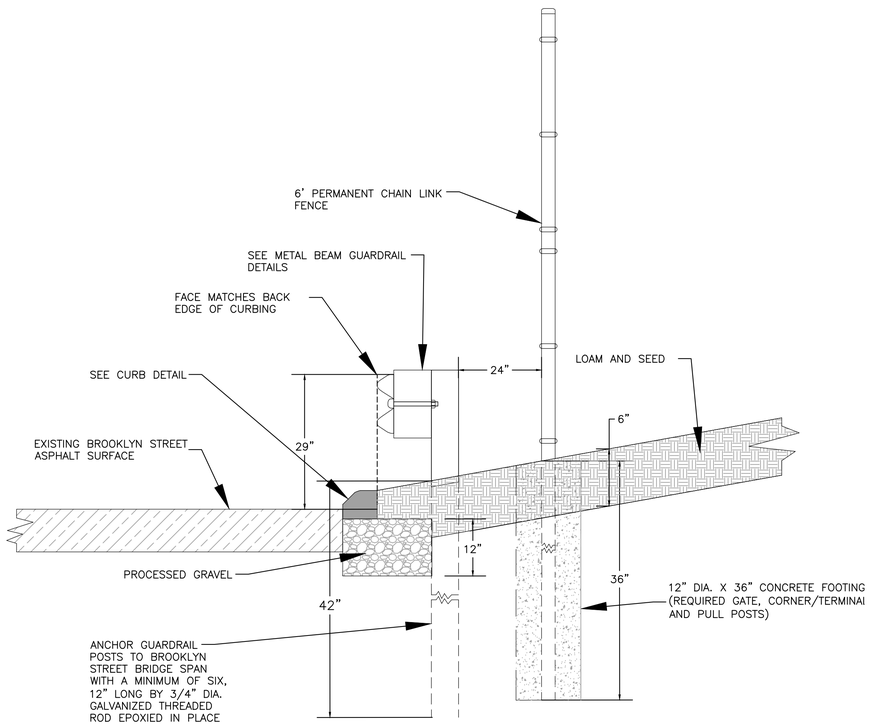
NOT TO SCALE



PLAN

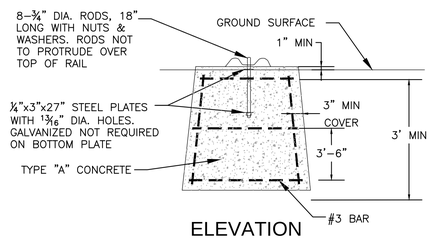
METAL BEAM GUARDRAIL

NOT TO SCALE

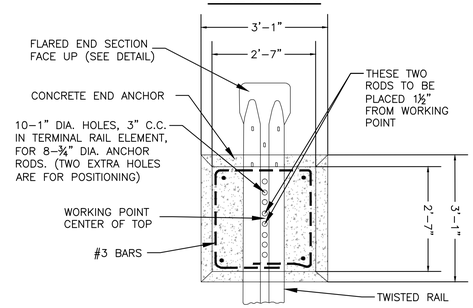


CROSS-SECTION A - A'

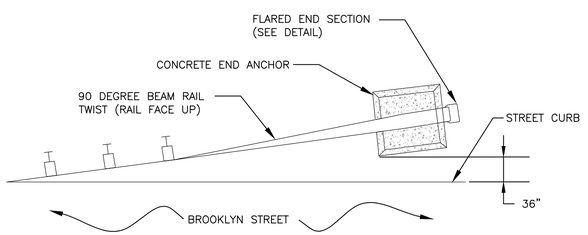
NOT TO SCALE



ELEVATION

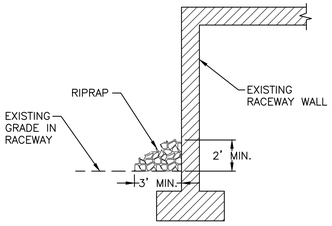


PLAN



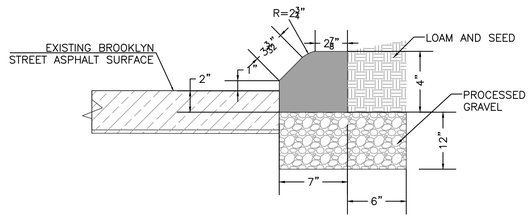
METAL BEAM GUARDRAIL CONCRETE GROUND TERMINATION

NOT TO SCALE



SCOUR PROTECTION DETAIL

NOT TO SCALE



BITUMINOUS CONCRETE CURBING

NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

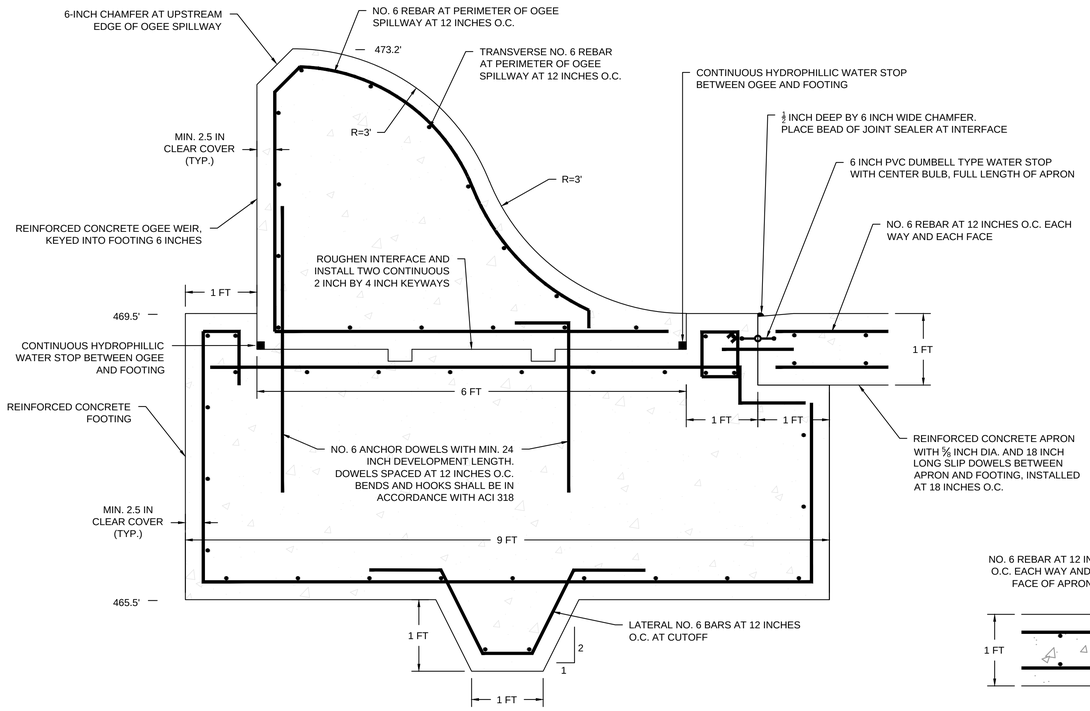
TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

SITE RESTORATION DETAILS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

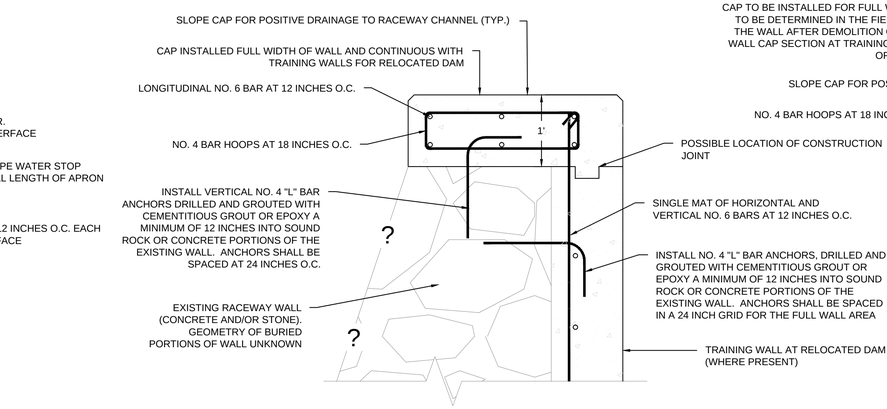
PREPARED FOR:
THE TOWN OF VERNON, CONNECTICUT

PROJ MGR: DJR	REVIEWED BY: SMR	CHECKED BY: SCC		FIGURE
DESIGNED BY: SCC	DRAWN BY: SCC	SCALE: 1" = 30'		10
DATE: 02-15-16	PROJECT NO. 05.0045441.04	REVISION NO.		



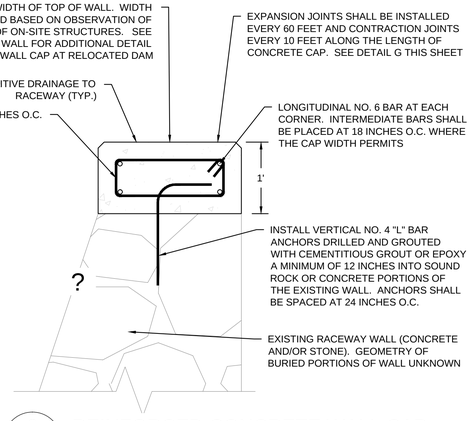
A 8 OGEE AND FOOTING REINFORCEMENT DETAIL

0 6" 1' 2'
SCALE: 1" = 1'



5 8 REINFORCED CONCRETE WALL CAP AT RELOCATED DAM TRAINING WALLS

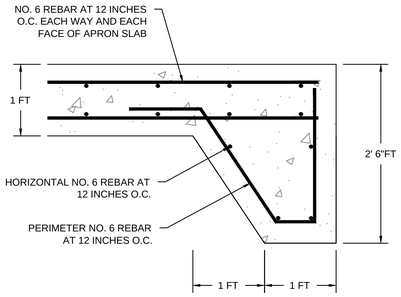
0 6" 1' 2'
SCALE: 1" = 1'



6 8 REINFORCED CONCRETE WALL CAP

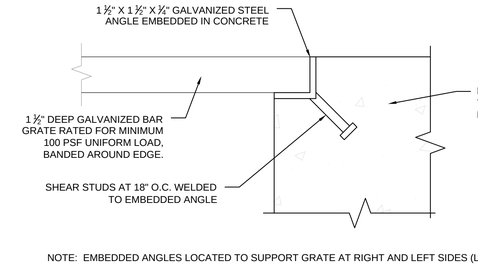
0 6" 1' 2'
SCALE: 1" = 1'

NOTES:
1. REINFORCED CONCRETE WALL CAP SHALL BE INSTALLED FOR FULL LENGTH OF EXPOSED RACEWAY WALL AFTER DEMOLITION WORK. THE CAP SHALL ENCOMPASS THE FULL WIDTH OF THE TOP OF RACEWAY WALL. THIS WIDTH SHALL BE DETERMINED IN THE FIELD AFTER DEMOLITION ACTIVITIES EXPOSE THE TOP OF WALL.



C 8 APRON HAUNCH DETAIL

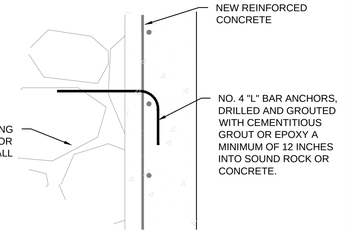
0 6" 1' 2'
SCALE: 1" = 1'



NOTE: EMBEDDED ANGLES LOCATED TO SUPPORT GRATE AT RIGHT AND LEFT SIDES (LOOKING DOWNSTREAM)

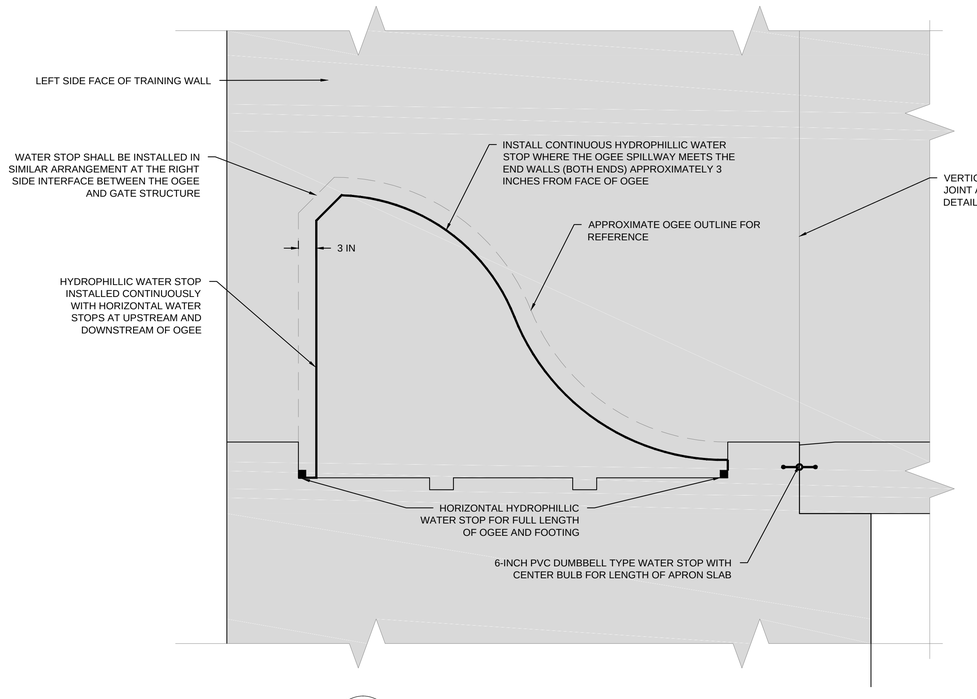
D 8 GALVANIZED STEEL GRATE AND SUPPORT DETAIL

NOT TO SCALE



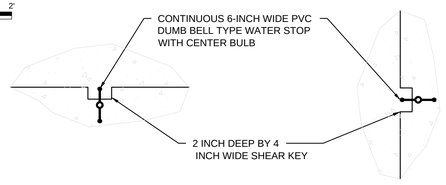
H 8 ANCHOR DOWEL DETAIL

NOT TO SCALE



B 8 OGEE WATER STOP DETAIL

0 6" 1' 2'
SCALE: 1" = 1'

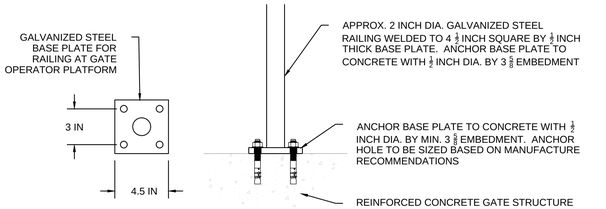


HORIZONTAL C.J.

VERTICAL C.J.

E 8 TYPICAL CONSTRUCTION JOINT DETAIL

NOT TO SCALE

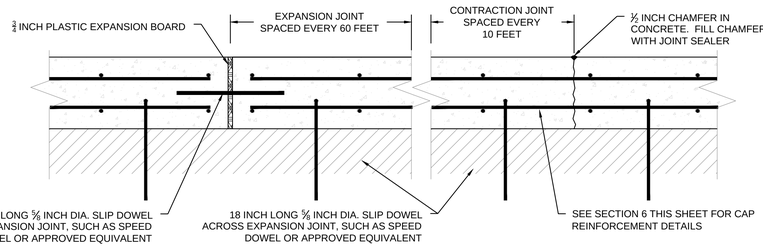


PLAN

SECTION

F 8 RAILING CONNECTION DETAIL

0 3" 6" 12"
SCALE: 1" = 6"



EXPANSION JOINT

CONTRACTION JOINT

NOTE: EXPANSION JOINTS SHALL BE INSTALLED WHERE THE CAP MEETS THE UPSTREAM AND DOWNSTREAM END OF THE RELOCATED DAM TRAINING WALLS.

G 8 CONCRETE CAP JOINT DETAIL

NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

MISCELLANEOUS DETAILS
DAM

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF VERNON, CONNECTICUT

PROJ MGR:	CBN	REVIEWED BY:	PHB	CHECKED BY:	CWC
DESIGNED BY:	CBN	DRAWN BY:	CBN	SCALE:	AS NOTED
DATE:	2-12-2016	PROJECT NO.	05.0045441.05	REVISION NO.	

FIGURE 11

ATTACHMENT C
PREVAILING STATE WAGE RATES

Minimum Rates and Classifications for Building Construction

ID# : B 21785

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
State#:

Project Town: Vernon
FAP#:

Project: Former Amberelle Mill Phase II

CLASSIFICATION	Hourly Rate	Benefits
1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings	35.75	28.82
1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
1c) Asbestos Worker/Heat and Frost Insulator	37.15	27.56

As of: **Wednesday, February 24, 2016**

2) Boilermaker	35.24	25.01
3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	28.74 + a
3b) Tile Setter	33.75	24.21
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.26	20.69
3e) Plasterer	32.50	29.45

As of: **Wednesday, February 24, 2016**

Project: Former Amberelle Mill Phase II

------LABORERS------

4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	27.85	18.30
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman (Person running mixer and spraying fireproof only).	28.10	18.30
4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	28.35	18.30
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is $26.80.	28.85	18.30
4d) Group 5: Air track operator, sand blaster and hydraulic drills.	28.60	18.30

As of: **Wednesday, February 24, 2016**

4e) Group 6: Blasters, nuclear and toxic waste removal.	30.85	18.30
4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	28.85	18.30
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	28.38	18.30
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	27.86	18.30
4i) Group 10: Traffic Control Signalman	16.00	18.30
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	31.45	23.54

As of: **Wednesday, February 24, 2016**

5a) Millwrights	31.84	23.99
6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	38.20	23.72+3% of gross wage
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	47.96	28.385+a+b
-----LINE CONSTRUCTION----		
Groundman	24.99	6.25%+11.81
Linemen/Cable Splicer	45.43	6.25%+20.70

As of: **Wednesday, February 24, 2016**

8) Glazier (Trade License required: FG-1,2)	35.08	19.35 + a
9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	34.47	31.09 + a
----OPERATORS----		
Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over), work boat 26 ft. and over and Tunnel Boring Machines. (Trade License Required)	37.55	23.05 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	37.23	23.05 + a
Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	36.49	23.05 + a

As of: **Wednesday, February 24, 2016**

Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	36.10	23.05 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	35.51	23.05 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	35.51	23.05 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	35.20	23.05 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	34.86	23.05 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	34.46	23.05 + a

As of: **Wednesday, February 24, 2016**

Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	34.03	23.05 + a
Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	31.99	23.05 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	31.99	23.05 + a
Group 12: Wellpoint operator.	31.93	23.05 + a
Group 13: Compressor battery operator.	31.35	23.05 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	30.21	23.05 + a

As of: **Wednesday, February 24, 2016**

Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	29.80	23.05 + a
Group 16: Maintenance Engineer/Oiler.	29.15	23.05 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	33.46	23.05 + a
Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	31.04	23.05 + a
------PAINTERS (Including Drywall Finishing)------		
10a) Brush and Roller	31.52	19.35

As of: **Wednesday, February 24, 2016**

10b) Taping Only/Drywall Finishing	32.27	19.35
10c) Paperhanger and Red Label	32.02	19.35
10e) Blast and Spray	34.52	19.35
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	40.62	28.91
12) Well Digger, Pile Testing Machine	33.01	19.40 + a
13) Roofer (composition)	33.70	18.23

As of: **Wednesday, February 24, 2016**

14) Roofer (slate & tile)	34.20	18.23
15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	35.74	33.22
16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	40.62	28.91
------TRUCK DRIVERS------		
17a) 2 Axle	28.58	20.24 + a
17b) 3 Axle, 2 Axle Ready Mix	28.68	20.24 + a

As of: **Wednesday, February 24, 2016**

17c) 3 Axle Ready Mix	28.73	20.24 + a
17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.78	20.24 + a
17e) 4 Axle Ready Mix	28.83	20.24 + a
17f) Heavy Duty Trailer (40 Tons and Over)	29.03	20.24 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.83	20.24 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	41.37	20.37 + a

19) Theatrical Stage Journeyman	25.76	7.34

Project: Former Amberelle Mill Phase II

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra $2.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol. For those without internet access, please contact the division listed below.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

As of: **Wednesday, February 24, 2016**

Project: Former Amberelle Mill Phase II

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: **Wednesday, February 24, 2016**

Project: Former Amberelle Mill Phase II

Minimum Rates and Classifications
for Heavy/Highway Construction

ID#: **H** 21785

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town: Vernon

FAP Number:

State Number:

Project: Former Amberelle Mill Phase II

CLASSIFICATION	Hourly Rate	Benefits
01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 5 and 7**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	32.50	28.34
2) Carpenters, Piledrivermen	31.45	23.54

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Project: Former Amberelle Mill Phase II

2a) Diver Tenders	31.45	23.54
3) Divers	39.91	23.54
03a) Millwrights	31.84	23.99
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	45.95	19.35
4a) Painters: Brush and Roller	31.52	19.35
4b) Painters: Spray Only	34.52	19.35
4c) Painters: Steel Only	33.02	18.55

As of: Wednesday, February 24, 2016

Project: Former Amberelle Mill Phase II

4d) Painters: Blast and Spray	34.52	19.35
4e) Painters: Tanks, Tower and Swing	33.52	19.35
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	38.20	23.72 + 3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	34.47	31.09 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	40.62	28.91
----LABORERS---- -		
8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	27.85	18.30

Project: Former Amberelle Mill Phase II

9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	28.10	18.30
10) Group 3: Pipelayers	28.35	18.30
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	28.35	18.30
12) Group 5: Toxic waste removal (non-mechanical systems)	29.85	18.30
13) Group 6: Blasters	29.60	18.30
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	28.85	18.30
Group 8: Traffic control signalmen	16.00	18.30

As of: Wednesday, February 24, 2016

Group 9: Hydraulic Drills	28.60	18.30
----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----		
13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	32.22	18.30 + a
13b) Brakemen, Trackmen	31.28	18.30 + a
----CLEANING, CONCRETE AND CAULKING TUNNEL----		
14) Concrete Workers, Form Movers, and Strippers	31.28	18.30 + a
15) Form Erectors	31.60	18.30 + a

Project: Former Amberelle Mill Phase II

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----		
16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	31.28	18.30 + a
17) Laborers Topside, Cage Tenders, Bellman	31.17	18.30 + a
18) Miners	32.22	18.30 + a
----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----		
18a) Blaster	38.53	18.30 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	38.34	18.30 + a

As of: Wednesday, February 24, 2016

Project: Former Amberelle Mill Phase II

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	36.41	18.30 + a
21) Mucking Machine Operator	39.11	18.30 + a
----TRUCK DRIVERS----(*see note below)		
Two axle trucks	28.58	20.24 + a
Three axle trucks; two axle ready mix	28.68	20.24 + a
Three axle ready mix	28.73	20.24 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	28.78	20.24 + a

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Four axle ready-mix	28.83	20.24 + a
Heavy duty trailer (40 tons and over)	29.03	20.24 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	28.83	20.24 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)	37.55	23.05 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	37.23	23.05 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	36.49	23.05 + a

Project: Former Amberelle Mill Phase II

Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	36.10	23.05 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	35.51	23.05 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	35.51	23.05 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	35.20	23.05 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	34.86	23.05 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	34.46	23.05 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	34.03	23.05 + a

As of: Wednesday, February 24, 2016

Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	31.99	23.05 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	31.99	23.05 + a
Group 12: Wellpoint Operator.	31.93	23.05 + a
Group 13: Compressor Battery Operator.	31.35	23.05 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	30.21	23.05 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	29.80	23.05 + a
Group 16: Maintenance Engineer/Oiler	29.15	23.05 + a

Project: Former Amberelle Mill Phase II

Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	33.46	23.05 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	31.04	23.05 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Technician	45.43	6.25%+19.20
21) Heavy Equipment Operator	40.89	6.25%+17.18
22) Equipment Operator, Tractor Trailer Driver, Material Men	38.62	6.25%+16.68

As of: Wednesday, February 24, 2016

Project: Former Amberelle Mill Phase II

23) Driver Groundmen	24.99	6.25%+10.87
23a) Truck Driver	34.07	6.25%+15.41
----LINE CONSTRUCTION----		
24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20
26) Heavy Equipment Operators	37.10	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20

As of: Wednesday, February 24, 2016

Project: Former Amberelle Mill Phase II

28) Material Men, Tractor Trailer Drivers, Equipment Operators	35.04	6.5% + 10.45

Project: Former Amberelle Mill Phase II

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra $2.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

As of: Wednesday, February 24, 2016

Project: Former Amberelle Mill Phase II

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Wednesday, February 24, 2016

ATTACHMENT D

CONTRACTOR'S WAGE CERTIFICATION FORM

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53
Certified Payrolls with a statement of compliance
shall be submitted monthly to the contracting agency.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

Connecticut Department of Labor
Wage and Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

CONTRACTOR NAME AND ADDRESS:

SUBCONTRACTOR NAME & ADDRESS

WORKER'S COMPENSATION INSURANCE CARRIER

POLICY #

EFFECTIVE DATE:
EXPIRATION DATE:

PAYROLL NUMBER | Week-Ending Date | PROJECT NAME & ADDRESS

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY								$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							

12/9/2013
WWS-CP1

*IF REQUIRED

*SEE REVERSE SIDE

PAGE NUMBER _____OF

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

1) Medical or hospital care _____ 4) Disability_____

2) Pension or retirement _____ 5) Vacation, holiday_____

3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____of _____, (hereafter known as

Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

a) The records submitted are true and accurate;

b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;

c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);

d) Each such person is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;

e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and

f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

_____ _____ _____

(Signature) (Title) Submitted on (Date)

*****THIS IS A PUBLIC DOCUMENT*****
*****DO NOT INCLUDE SOCIAL SECURITY NUMBERS*****

Weekly Payroll Certification For Public Works Projects (Continued)

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date:

Contractor or Subcontractor Business Name:

WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S HOURS WORKED EACH DAY	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							

*IF REQUIRED

ATTACHMENT E

SAMPLE PAYMENT APPLICATION FORMS

APPLICATION AND CERTIFICATE FOR PAYMENT

AIA DOCUMENT G702 PAGE 1 OF PAGES

TO (OWNER):

APPLICATION NO.:

PERIOD TO:

FROM (CONTRACTOR):

KA#

Distribution to:
___ OWNER
___ ARCHITECT
___ CONTRACTOR
___ INSPECTOR
___

CONTRACT FOR:

CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for Payment, as shown, in connection with the Contract. Continuation Sheet, AIA Document G702, is attached.

1. ORIGINAL CONTRACT SUM ..... $ _____
2. Net change by Change Orders ..... $ _____
3. CONTRACT SUM TO DATE (Line 1+2)..... $ _____
4. TOTAL COMPLETED & STORED TO DATE..... $ _____
   (Column G on G702)
5. RETAINAGE:
   a. ____% of Completed Work $ _____
      (Column D+E)
   b. ____% of Stored Material $ _____
      (Column F on G703)
   Total Retainage (Line 5a + 5b or
   Total in Column 1 of G702..... $ _____
6. TOTAL EARNED LESS RETAINAGE..... $ _____
   (Line 4 less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR
   PAYMENT (Line 6 from prior Certificate) ..... $ _____
8. CURRENT PAYMENT DUE..... $ _____
9. BALANCE TO FINISH, PLUS RETAINAGE..... $ _____
   (Line 3 less Line 6)

CHANGE ORDER SUMMARY

Change Orders approved in previous months by Owner TOTAL		ADDITIONS	DEDUCTIONS
Approved this Month			
Number	Date Approved		
TOTALS			

Net change by Change Orders

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief, the Work covered by this Application for payment has been completed in accordance with the Contract Documents, that all previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By:_____ Date: _____

State of: County of:
Subscribed and sworn to before me this day of ,20
Notary Public:
My Commission expires:

CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Architect/Inspector certifies to the Owner that to the best of the his/her knowledge, information and belief, the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

Inspector: _____ Date: _____

Project Manager_____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

AMOUNT CERTIFIED ..... $ _____

(Attach explanation if amount certified differs from the amount applied for.)

CONTINUATION SHEET

AIA DOCUMENT G703 PAGE OF PAGES

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification is attached.
In Tabulations below, amounts are stated to the nearest dollar.
Use Column 1 on Contracts where variable retainage for line items may apply.

APPLICATION NUMBER:
APPLICATION DATE:
PERIOD TO:

			WORK COMPLETED						
A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G + C)	BALANCE TO FINISH (C - G)	RETAINAGE

ATTACHMENT F

CHRO BIDDER CONTRACT COMPLIANCE MONITORING REPORT

COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS
NOTIFICATION TO BIDDERS
(Revised 09/3/15)

The contract to be awarded is subject to contract compliance requirements mandated by Sections 4a-60 and 4a-60a of the Connecticut General Statutes; and, when the awarding agency is the State, Sections 46a-71(d) and 46a-81i(d) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at Section 46a-68j-21 through 43 of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by Sections 4a-60 and 46a-71(d) of the Connecticut General Statutes.

According to Section 46a-68j-30(9) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to "aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials." "Minority business enterprise" is defined in Section 4a-60 of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: "(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of Section 32-9n." "Minority" groups are defined in Section 32-9n of the Connecticut General Statutes as "(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4)Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . ." An individual with a disability is also a minority business enterprise as provided by Section 4a-60g of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of Section 46a-68j-21(11) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder's qualifications under the contract compliance requirements:

(a) the bidder's success in implementing an affirmative action plan;
(b) the bidder's success in developing an apprenticeship program complying with Sections 46a-68-1 to 46a-68-17 of the Administrative Regulations of Connecticut State Agencies, inclusive;
(c) the bidder's promise to develop and implement a successful affirmative action plan;
(d) the bidder's submission of employment statistics contained in the "Employment Information Form", indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and
(e) the bidder's promise to set aside a portion of the contract for legitimate minority business enterprises. See Section 46a-68j-30(10)(E) of the Contract Compliance Regulations.

INSTRUCTIONS AND OTHER INFORMATION

The following BIDDER CONTRACT COMPLIANCE MONITORING REPORT must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to Sections 4a-60 and 4a-60a CONN. GEN. STAT., and Sections 46a-68j-23 of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder's good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) Definition of Small Contractor

Section 4a-60g CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding fifteen million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision 4a-60g CONN. GEN. STAT.

MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

MARKETING AND SALES: Occupations related to the act or process of buying and selling products and/or services such as sales engineer, retail sales workers and sales representatives including wholesale.

LEGAL OCCUPATIONS: In-House Counsel who is charged with providing legal advice and services in regards to legal issues that may arise during the course of standard business practices. This category also includes assistive legal occupations such as paralegals, legal assistants.

COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists,systems analysts, and computer support specialists

ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, bill and account collectors, customer service representatives, dispatchers, secretaries and administrative assistants, computer operators and clerks (such as payroll, shipping, stock, mail and file).

BUILDING AND GROUNDS CLEANING AND MAINTENANCE: This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

CONSTRUCTION AND EXTRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category..

INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

PRODUCTION WORKERS: The job titles included in this category are chemical production machine setters, operators and tenders; crushing/grinding workers; cutting workers; inspectors, testers sorters, samplers, weighers; precious stone/metal workers; painting workers; cementing/gluing machine operators and tenders; etchers/engravers; molders, shapers and casters except for metal and plastic; and production workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information)

White (not of Hispanic Origin)- All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East. Black(not of Hispanic Origin)- All persons having origins in any of the Black racial groups of Africa. Hispanic- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.	Asian or Pacific Islander- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa. American Indian or Alaskan Native- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.

BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART I - Bidder Information

Company Name Street Address City & State Chief Executive	Bidder Federal Employer Identification Number _____ Or Social Security Number_____
Major Business Activity (brief description)	Bidder Identification (response optional/definitions on page 1) -Bidder is a small contractor. Yes __No __ -Bidder is a minority business enterprise Yes __No __ (If yes, check ownership category) Black ___ Hispanic___ Asian American___ American Indian/Alaskan Native ___Iberian Peninsula___ Individual(s) with a Physical Disability___ Female ___
Bidder Parent Company (If any)	- Bidder is certified as above by State of CT Yes__ No__
Other Locations in Ct. (If any)	

PART II - Bidder Nondiscrimination Policies and Procedures

1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes__ No__	7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes__ No__
2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes__ No__	8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes__ No__
3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes__ No__	9. Does your company have a mandatory retirement age for all employees? Yes__ No__
4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes __No __	10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes__ No__ NA__
5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes __No __	11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes __No __NA __
6. Does your company have a collective bargaining agreement with workers? Yes__ No__ 6a. If yes, do the collective bargaining agreements contain non-discrim ination clauses covering all workers? Yes__ No__ 6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of Ct? Yes__ No__	12. Does your company have a written affirmative action Plan? Yes __No __ If no, please explain. 13. Is there a person in your company who is responsible for equal employment opportunity? Yes __No __ If yes, give name and phone number. _____

Part III - Bidder Subcontracting Practices (Page 4)

1. Will the work of this contract include subcontractors or suppliers? Yes__ No__

1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise. (defined on page 1 / use additional sheet if necessary)

1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a. above? Yes__ No__

PART IV - Bidder Employment Information Date:

JOB CATEGORY *	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	male	female
Management											
Business & Financial Ops											
Marketing & Sales											
Legal Occupations											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation , Maintenance & Repair											
Material Moving Workers											
Production Occupations											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

*NOTE: JOB CATEGORIES CAN BE CHANGED OR ADDED TO (EX. SALES CAN BE ADDED OR REPLACE A CATEGORY NOT USED IN YOUR COMPANY)

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source	(X)		
State Employment Service					Work Experience	
Private Employment Agencies					Ability to Speak or Write English	
Schools and Colleges					Written Tests	
Newspaper Advertisement					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendation	
Minority/Community Organizations					Height or Weight	
Others (please identify)					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)

ATTACHMENT G

PROJECT SIGN TEMPLATE

PROJECT SIGN – ECONOMIC & COMMUNITY DEVELOPMENT

8’-0”

4’0”

NAME OF THE PROJECT

NAME OF THE SPONSOR/DEVELOPER

Constructed in cooperation with the

STATE OF CONNECTICUT
DANNEL P. MALLOY, GOVERNOR

Department of Economic and Community Development
Catherine Smith, Commissioner

and the

Name of Town/City
Name of Chief Elected Official and title

Name of Architect

Name of General Contractor

SIGN PANEL: $^{3}/_{4}$” MDO-EXT-APA PLYWOOD SUPPORTED WITH (2) 4X4 TREATED WOOD COLUMNS AND SECURED 4’ INTO GRADE. TOP OF SIGN AT 8’-0” ABOVE GRADE.

COLORS: ALL LETTERS AND SYMBOLS ARE TO BE ROYAL BLUE. THE BACKGROUND WILL BE WHITE ENAMEL. BACK OF PLYWOOD AND SUPPORT STRUCTURE SHALL BE PAINTED MATTE BLACK.

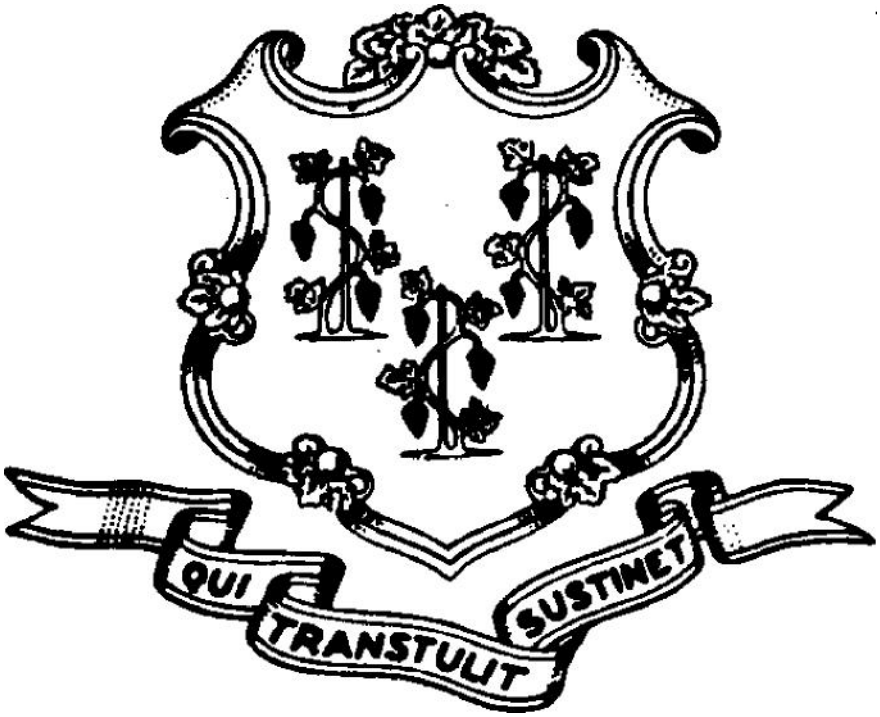
TYPEFACE: HELVETICA MEDIUM

LOCATION: SIGN MUST BE LOCATED TO BE CLEARLY VISIBLE TO THE PUBLIC.

TIMING: INSTALL AT THE START OF CONSTRUCTION AND REMOVE AT CONSTRUCTION COMPLETION.

STATE SEAL & DECD LOGO: ATTACHED

STATE SEAL



DECD LOGO

Connecticut®
still revolutionary

ATTACHMENT H

TECHNICAL REPORTS AND DATA

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 23, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/27/15 & 4/3 & 6/15)**
104 East Main Street; Vernon, CT
Location: Mill #1

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 27th, April 3rd & 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
506	Roof Field/Flat Roof Above Pitched Roof	1,500 sq. ft./All
PACM	Pile of Windows/Basement	6 windows
PACM	Transite Panel/Platform for Motor at roof deck for blower with Round duct work (Approximately 30' up)	3 sq. ft.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00106

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #1; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00106-001	177		White Chalky; Brown Fibrous; Inhomogeneous	NAD	15% Cellulose 2% Fibrous Glass 83% Non-Fibrous
15-04-00106-002	178		White Chalky; Brown Fibrous; Inhomogeneous	NAD	20% Cellulose 2% Fibrous Glass 78% Non-Fibrous
15-04-00106-003	179		White Chalky; Brown Fibrous; Inhomogeneous	NAD	20% Cellulose 2% Fibrous Glass 78% Non-Fibrous
15-04-00106-004	180		Beige Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00106-005	181		Beige Granular; Homogeneous	NAD	100% Non-Fibrous

ENCLOSURE 1 PAGE 1 OF 5

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00106
Project/Test Address: Mill #1; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00106-006	182		Beige Granular; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00106
Project/Test Address: Mill #1; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 78-M12012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Kathy Fletcher

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01053

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/09/2015, 04/10/2015
Reported Date: 04/13/2015

Project/Test Address: Mill #1; Vernon, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01053-001	506		Dark Brown/Black Fibrous; Black Brittle; Inhomogeneous	25% Chrysotile	20% Cellulose 55% Non-Fibrous
			Total Asbestos:	**25%**	
Chrysotile present in dark brown felt paper (predominant) material.					
15-04-01053-002	507		Black Pliable to Brittle; Black Fibrous; Gray Aggregate; Inhomogeneous	NAD	20% Fibrous Glass 80% Non-Fibrous
15-04-01053-003	508		Black Pliable to Brittle; Black Fibrous; Off-White/Pale Green Aggregate; Inhomogeneous	NAD	22% Fibrous Glass 78% Non-Fibrous
15-04-01053-004	509		Black Fibrous; Black Brittle; Dark Gray Aggregate; Inhomogeneous	NAD	35% Cellulose 3% Hair 62% Non-Fibrous

Rev 1.0 (Revised On: 04/13/2015): Analyzed all samples per client.

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01053
Project/Test Address: Mill #1; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01053-005	510		Black Fibrous; Homogeneous	NAD	60% Cellulose 5% Hair 35% Non-Fibrous

QC Sample: 73-M12009-4, 74-M22011-2
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Mark Case

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

Rev 1.0 (Revised On: 04/13/2015): Analyzed all samples per client.

EHS Laboratories

9PLM

Asbestos Chain-of-Custody

15-04-00106

Due Date:
04/06/2015
(Monday)
AE

Environmental Hazards Services, LLC
www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: MILL #1 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	177-179	3/27/15	X	POSITIVE STOP	SHEETROCK-WALL SYSTEM	SEE ROSTER	BULKS
2	180-182	↓	↓		PLASTER SKIM COAT	↓	↓
3	183-185	↓	↓		FLOORTILE-MASTIC	↓	↓
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: CMUELLER Signature: CM date: 3/31/15

Received by: TMcLean Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories

5PM

Asbestos Chain-of-Custody

15-04-01053

Due Date:
04/13/2015
(Monday)
AE

MQC

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: MILL # 1 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	506	4/6	X	POSITIVE STOP	ROOFING	SEE ROSTER	
2	507						
3	508						
4	509						
5	510						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C MULLER Signature: CM date: 4/6/15

Received by: THOMAS Signature: date: 4/8/15

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 1
VERNON, CT
FORMER "AMERELLE"

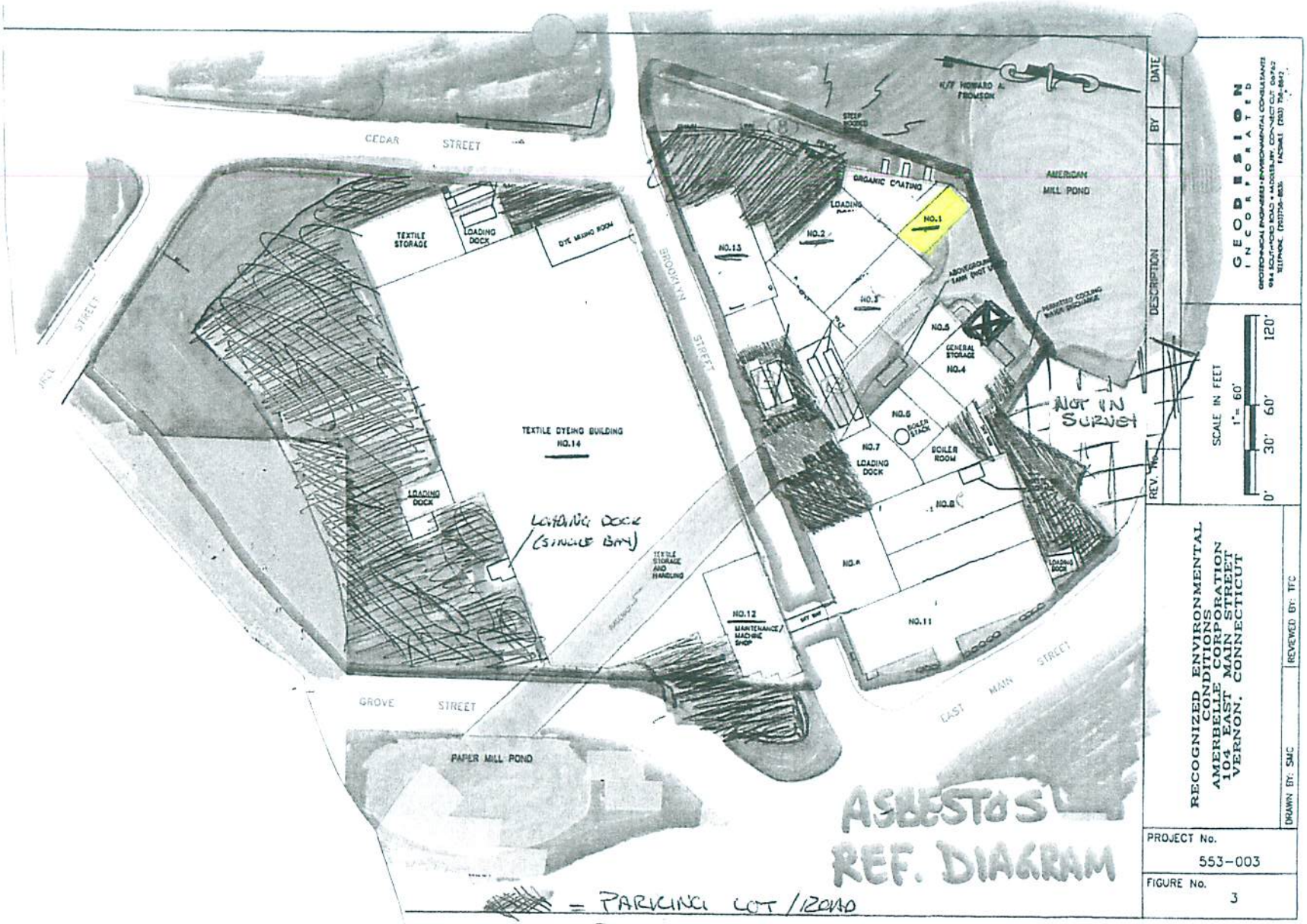
DATE: 03/27/15
✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
ASSUMED	TRANSITE PANEL	3 FT²	INTACT	PLATFORM FOR MOTOR AT ROOF DECK FOR BLOWER w/
				ROUND DUCT WORK. (APPROX 30' UP)
177-179	SHEETROCK WALL SYSTEM	>1000 FT²/ALL	DAMAGED	THROUGH OUT
180-182	PLASTER, WALL SKIM COAT	>1000 FT²/ALL	↓	THROUGH OUT
ASSUMED	PILE OF WINDOWS	IN BASEMENT (*)		
506	FIELD - FLAT ROOF	1500 FT²/ALL		FLAT ROOF ABOVE PITCHED ROOF
507	SHINGLE, GREEN	700 FT²/ALL		PITCHED ROOF (TOP)
508	" , WHITE	20 FT²		" " (REPAIR)
509	" , BLUE	700 FT²/ALL		" " (MIDDLE)
510	FELT	700 FT²/ALL		" " (BOTTOM)

4-6-15

COMMENTS: (*) BASEMENT WINDOW PILE >6 WINDOWS
(183-186 IS @ MILL #14)

Inspector: B. WOODARD C. MULLER



ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00588

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/07/2015
Reported Date: 04/08/2015

Project/Test Address: Mill #1; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00588-001	TCLP-Pb	Bldg. Debris	100	0.60	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

15-04-00588

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MACLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #1 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLIN Certification Number: N/A Purchase Order Number: GIZIA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
		2015	Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM- 10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	4-3	X														COMPOSITE
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLIN Signature: [signature] Date/Time: 04-__-15 / 1600

Date/Time: Trishann 4/6/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/27/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-Pb SAMPLE COLLECTION.

⊛ MILLS 13, 2, 1, 3 - SAME NOTE 1/9 3/26

HYGIENIST'S NAME N. CARAFENO C. MILLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

DAILY JOB LOG

Date 04/03/15

Page 1 of ___

Client GZA

Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED + DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

HYGIENIST'S NAME B.WOODARD C.MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

PAGE 2 OF 3

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

HYGIENIST'S NAME B. WOODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 23, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/27 & 4/3 /15)**
104 East Main Street; Vernon, CT
Location: Mill #2

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 27th and April 3rd, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
169-171	Window Glazing Compound/Interior Windows @ Saw Tooth Roof	13 windows
172-174	Transite Panels/At Blocked-Up Windows	2 windows
175	Pipe T.S.I. (aircell)/At Blocked-Up Center Window	3 linear ft.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Asbestos Bulk Analysis Report

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Report Number: 15-04-00107

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #2; Vernon, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00107-001	169	--	Red Brittle; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
15-04-00107-002	170	--		Did Not Analyze (Positive Stop)	
15-04-00107-003	171	--		Did Not Analyze (Positive Stop)	
15-04-00107-004	172	--	Gray Cementitious; White Paint-Like; Inhomogeneous	25% Chrysotile	75% Non-Fibrous
			Total Asbestos:	**25%**	
Chrysotile present in gray cementitious material.					
15-04-00107-005	173	--		Did Not Analyze (Positive Stop)	
15-04-00107-006	174	--		Did Not Analyze (Positive Stop)	

ENCLOSURE | PAGE 1 OF 2

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00107
Project/Test Address: Mill #2; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00107-007	175	--	Gray Fibrous; Homogeneous	55% Chrysotile	10% Cellulose 35% Non-Fibrous
			Total Asbestos:	**55%**	
15-04-00107-008	176	--	White Rubbery; Homogeneous	NAD	100% Non-Fibrous

QC Sample: 77-M22010-4
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Araceli Enzler

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

8 PLM

Asbestos Chain-of-Custody

15-04-00107 A

Due Date: 04/06/2015 (Monday) AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #2 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	169-171	3/27/15	X	Positive Stop	Glazing Compound	SEE ROSTER	Bulks
2	172-174	"	"		Transite panels	"	"
3	175-	"	"		TSI	"	"
4	176-	"	"		Caulking	"	"
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C MULLER Signature: CM date: 3/31/15

Received by: T Ingram Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 1

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 2
VERNON, CT
FORMER "AMERICELLE"

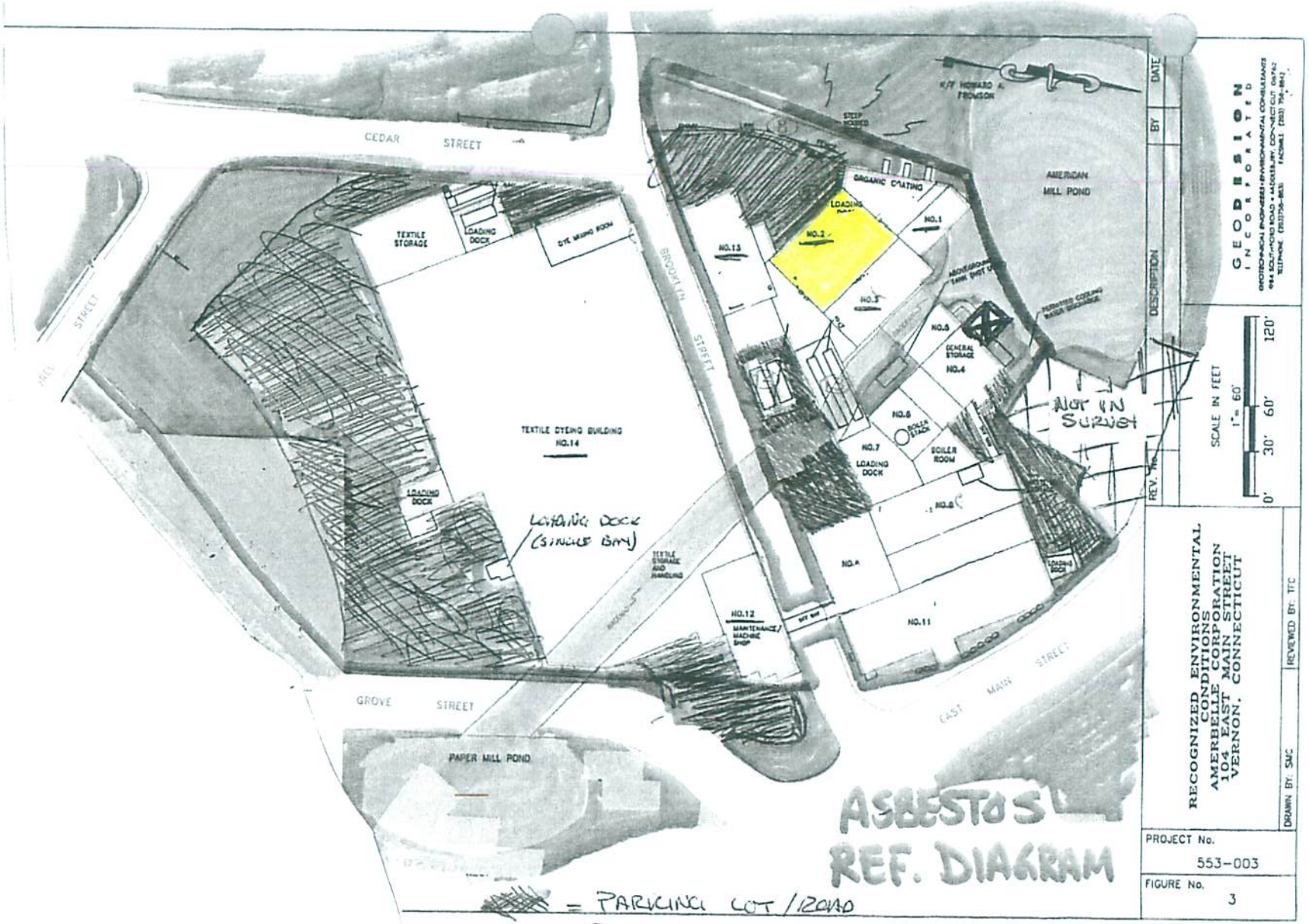
DATE: 03/27/15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
169-171	WGC	13 WINDOWS	DAMAGED	INTERIOR @ SAW TOOTH ROOF
172-174	TRANSITE PANELS	2 WINDOWS	↓	AT BLOCKED-UP WINDOWS
175	PIPE T.S.I. (ARCCEL)	3 LNFT	↓	AT BLOCKED-UP CENTER WINDOW
176	CAULKING	1 DOOR	↓	AT BEAM PAINTED RED

COMMENTS: _____

Inspector: B. WOODARD C. MILLER



ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00593

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/09/2015
Reported Date: 04/09/2015

Project/Test Address: Mill #2; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00593-001	TCLP-Pb	Bldg. Debris	100	<0.50	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

15-04-00593

Due Date:
04/09/2015
(Thursday)
AE

EHS Laboratories

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #2 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLEN Certification Number: N/A Purchase Order Number: GZIA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected 2015	METALS					OTHER METALS	PARTICULATES					AIR			Comments
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM- 10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	4 - 3	X														Composite
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLEN Signature: C. Mullen Date/Time: 04 - -15 / 1600

Received by: Signature: Tisha Graw Date/Time: 4/6/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/27/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

⊛ MILLS 13, 2, 1, 3 - SAME NOTE 1/8 3/26

HYGIENIST'S NAME N. CARAFENO C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED & DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK & CONCRETE...)

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 20, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/30/15 & 4/3 & 6/15)**
104 East Main Street; Vernon, CT
Location: Mill #3

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 30th, April 3rd and 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
186-188	Linoleum/Men's -1st Floor @ Elevator	100 sq. ft.
189	Window Glazing Compound/1st Floor	1 window
190	Transite Panels/4 Floors	Staircase
194	Black Sealer (tar like)/On CMU Blocks	1 window
199	Linoleum & Mastic/Bath -2nd Floor	8 sq. ft.
511	Silver (Repair)/Near Back @ wood siding	75 sq. ft./All
518	Flashing (Repairs)/Older Roof Line @ windows/doors	25 sq. ft./All

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00074

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #3; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00074-001A	186	Linoleum	Brown Vinyl; Tan Fibrous; Inhomogeneous	20% Chrysotile	20% Cellulose 60% Non-Fibrous
			Total Asbestos:	**20%**	
Chrysotile asbestos is present in the fibrous backing.					
15-04-00074-001B	186	Mastic	Yellow Adhesive; Homogeneous	Trace <1% Chrysotile	3% Cellulose 97% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
Possible contamination from fibrous backing.					
15-04-00074-002A	187	Linoleum		Did Not Analyze (Positive Stop)	
15-04-00074-002B	187	Mastic	Yellow Adhesive; Homogeneous	Trace <1% Chrysotile	3% Cellulose 97% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
Possible contamination from fibrous backing.					
15-04-00074-003A	188	Linoleum		Did Not Analyze (Positive Stop)	
15-04-00074-003B	188	Mastic	Yellow Adhesive; Homogeneous	Trace <1% Chrysotile	3% Cellulose 97% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
Possible contamination from fibrous backing.					

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00074
Project/Test Address: Mill #3; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00074-004	189		Red Brittle; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
15-04-00074-005	190		Gray Cementitious; Homogeneous	30% Chrysotile	70% Non-Fibrous
			Total Asbestos:	**30%**	
15-04-00074-006	191		Brown/Tan Granular; Gray Paint; Inhomogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00074-007	192		Brown/Tan Granular; Gray Paint; Inhomogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00074-008	193		Brown/Tan Granular; Gray Paint; Inhomogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00074-009	194		Black Tar-Like; Homogeneous	6% Chrysotile	3% Cellulose 91% Non-Fibrous
			Total Asbestos:	**6%**	
15-04-00074-010	195		Brown/Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00074-011	196		Brown/Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00074
Project/Test Address: Mill #3; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00074-012	197		Brown/Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00074-013	198		Brown/Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00074-014A	199	Linoleum	Brown Vinyl; Tan Fibrous; Inhomogeneous	20% Chrysotile	20% Cellulose 60% Non-Fibrous
			Total Asbestos:	**20%**	
Chrysotile asbestos is present in the fibrous backing.					
15-04-00074-014B	199	Mastic	Yellow Adhesive; Homogeneous	2% Chrysotile	3% Cellulose 95% Non-Fibrous
			Total Asbestos:	**2%**	
Possible contamination from fibrous backing.					
15-04-00074-015	200		Tan Brittle; Homogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
15-04-00074-016	201		Tan Brittle; Homogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00074
Project/Test Address: Mill #3; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 79-M22012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Christian H. Schaible

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01055

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/10/2015
Reported Date: 04/10/2015

Project/Test Address: Mill #3; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01055-001	511		Black Tar-Like; Fibrous; Silver Foil-Like; Inhomogeneous	8% Chrysotile	35% Cellulose 10% Fibrous Glass 10% Synthetic 37% Non-Fibrous
			Total Asbestos:	**8%**	
Chrysotile present in black fibrous material.					
15-04-01055-002	512		Black Tar-Like; Fibrous; Homogeneous	NAD	80% Cellulose 10% Synthetic 10% Non-Fibrous
15-04-01055-003	513		Black Tar-Like; Fibrous; Homogeneous	NAD	80% Cellulose 10% Synthetic 10% Non-Fibrous
15-04-01055-004	514		Black Tar-Like; Fibrous; Homogeneous	NAD	80% Cellulose 10% Synthetic 10% Non-Fibrous
15-04-01055-005	515		Gray Granular; Homogeneous	NAD	2% Cellulose 3% Hair 95% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01055

Project/Test Address: Mill #3; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01055-006	516		Gray Granular; Homogeneous	NAD	2% Cellulose 3% Hair 95% Non-Fibrous
15-04-01055-007	517		Gray Granular; Homogeneous	NAD	2% Cellulose 3% Hair 95% Non-Fibrous
15-04-01055-008	518		Black Tar-Like; Fibrous; Inhomogeneous	10% Chrysotile	25% Cellulose 15% Fibrous Glass 5% Synthetic 45% Non-Fibrous

Total Asbestos: 10%

Chrysotile present in black tar-like material.

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01055

Project/Test Address: Mill #3; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 74-M22011-2

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Timothy Harris

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

16 PLM

Asbestos Chain-of-Custody

15-04-00074

Due Date: 04/06/2015 (Monday) AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340

City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com

Acct. Number: 07-2564

Project Name and Address: Mill #3 City/State(required) Veenon, CT

Collected by: B.W. + C.M. Signature

Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	186-188	3/30/15	X	Positive Stop	Linoleum-mastic	See roster	B.W.'s
2	189-				Glazing Compound		
3	190-				Transite		
4	191-193				Skim coat@wall		
5	194-				Black Sealer		
6	195-198				Skim coat@wall		
7	199				Linoleum-mastic		
8	200-201	✓	✓	X	Glazing Compound	✓	✓
9							
10							
11							
12							
13							
14							
15							

Released by: C Muller date: 3/31/15

Received by: T Lohan Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories

8PLM

Asbestos Chain-of-Custody

15-04-01055

Due Date: 04/13/2015 (Monday) AE

Environmental Hazards Services, LLC

www.leadlab.com (800)347-4010 (804)275-4907 (fax)

7469 Whitepine Rd Richmond, VA 23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #3 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	511	4/6	X	Positive Stop	ROOFING	SEE ROSTER	
2	512-514	↓	↓	↓	↓	↓	
3	515-5-17				STUCO		
4	518	↓	↓	↓	ROOFING.	↓	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Mullen Signature: CM date: 4/10/15

Received by: Thohan Signature: date: 4/8/15

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #3
VERNON, CT
FORMERLY "AMERBELLE"

DATE: 03/30/15

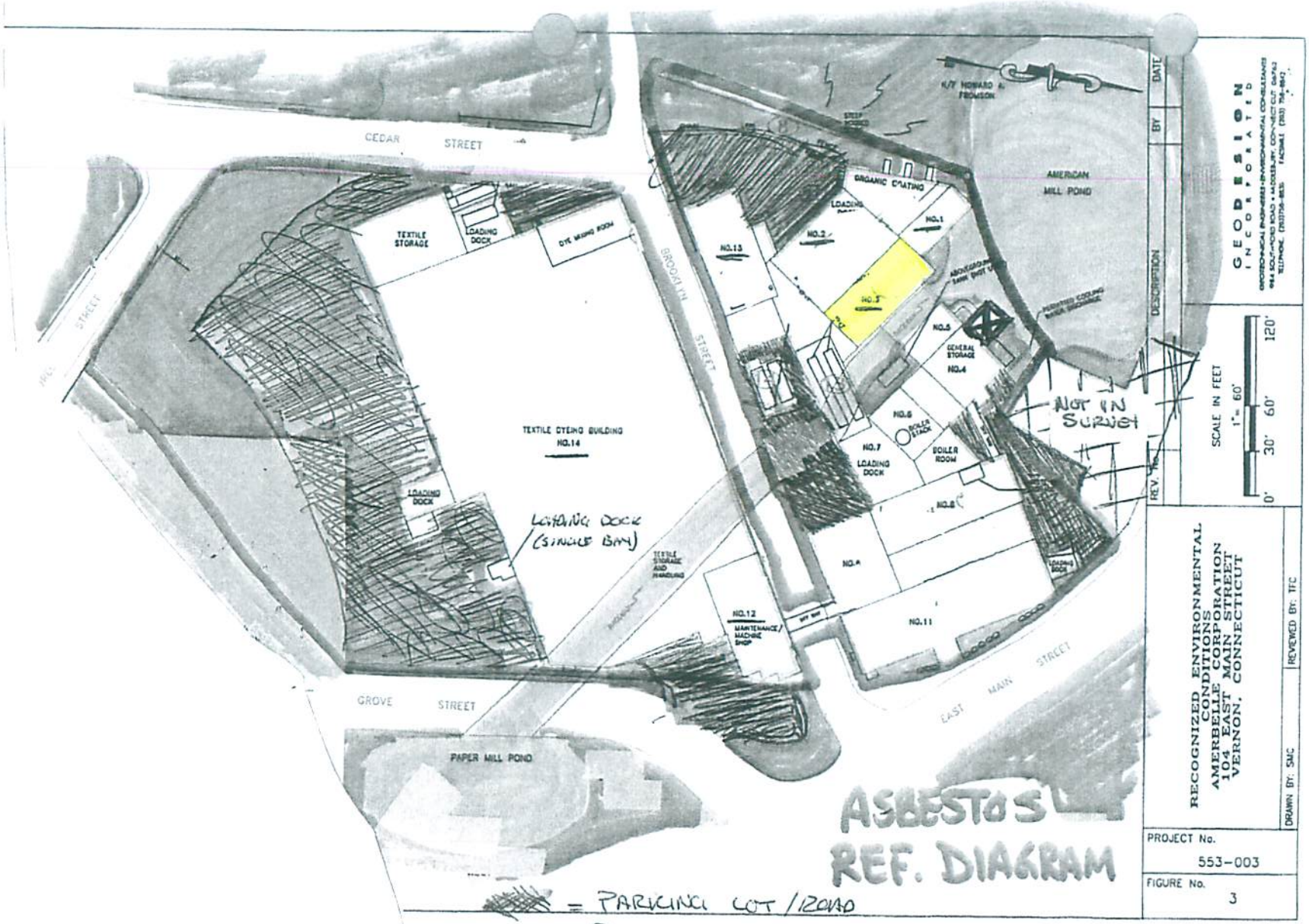
✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
186-188	LINOLEUM + MASTIC	100 FT²	DAMAGED	MENS - 1ST FLOOR @ ELEVATOR
189	WGC	1 WINDOW		1ST FLOOR
190	TRANSITE PANELS	STAIRCASE		4 FLOORS
191-193	PLASTER WALL SKIM COAT	>1000FT²/ALL		THROUGH OUT
AA-	SEALER (TAR LIKE BLACK)	1 WINDOW		ON CMU BLOCKS
195-198	PLASTER WALL SKIM COAT			THROUGH OUT
199	LINOLEUM + MASTIC	8 FT²		BATH - 2ND FLOOR
200-204	WGC	2 WINDOWS	↓	BACK ROOM
511	SILVER, REPAIR	75 FT²	DAMAGED	NEAR BACK @ WOOD SIDING
512-514	FELT	5000/ALL		UNDER WOOD SIDING
515-517	STUCO LIKE SIDING	10000/ALL		TOP COAT OF BLDG. SIDING.
518	FLASHING (REPAIRS)	25 FT²/ALL		OLDER ROOF LINE @ WINDOWS / DOORS

4-6-15

COMMENTS: WGC = WINDOW GLAZING COMPOUND
(183-185 IS @ MILL #14)

Inspector: B. WOODARD C. MILLER



ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00591

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/07/2015
Reported Date: 04/08/2015

Project/Test Address: Mill #3; Vernon, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00591-001	TCLP-Pb	Bldg. Debris	100	<0.50	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

ENCLOSURE 5 PAGE 1 OF 2

15-04-00591

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

EHS Laboratories

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #3 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLIN Certification Number: N/A Purchase Order Number: GIA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
		2015	Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L/min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	4-3	X														COMPOSITE
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLIN Signature: [signature] Date/Time: 04-15 / 1600

Date/Time: Thursday / 4/16/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/30/15

DAILY JOB LOG

Page 1 of ___

Client GZA

Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

* ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

MILLS 4, 7, 11, 9 + 6 - SAME NOTE AS 3/26

ENCLOSURE 6 PAGE 1 OF 3

HYGIENIST'S NAME B. WOODWARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED + DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

HYGIENIST'S NAME B. NICODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA

Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

* ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

HYGIENIST'S NAME B. WOODWARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com maqc2@aol.com 800 247-7746

April 20, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/30/15 & 4/3 & 8/15)**
104 East Main Street; Vernon, CT
Location: Mill #4 & Small Brick Building Behind Mill #4

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 30th, April 3rd and 8th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
202	Transite Panel/Four Floors	Stairwells
203-207	Plaster Wall Skim Coat/Walls Throughout	>1,000 sq. ft./All
208-210	Window Glazing Compound/Windows Throughout	All
214-216	Pipe T.S.I. (large diameter)/Next to Chem. Storage	45 linear ft.
439-441	Window Glazing Compound/Exterior Windows (some are blocked/boarded)	All
PACM	Window Glazing Compound/Bridge from Mill 4 to Mill 8 (no access)	4 windows
PACM	Window Caulking/Bridge from Mill 4 to Mill 8 (no access)	4 windows
Small Brick Building Behind Mill #4 –Materials Seen		
PACM	Roofing & Debris/Roof (collapsed)	20'x 20'/All
PACM	Window Glazing Compound/Windows	All
PACM	Caulking/Windows & Doors	All
PACM	Sheetrock –Transite/Walls (interior)	All

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com maqc2@aol.com 800 247-7746

Small Brick Building Behind Mill #4 –Materials Not Seen

Sample #s	Material/Location	Estimated Affected Area
PACM	Floorings & Mastics/Interior Floors	All
PACM	Adhesives (walls)/Interior	All
PACM	Pipe T.S.I./Interior Pipes	All
PACM	Debris (building materials)/Interior & Exterior Debris Piles	All

*****Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled. There was no access to sample the asbestos or lead from the small brick building behind Mill #4.**

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials from Mill #4 do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Pictures & Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00078

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #4; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00078-001	202	--	Gray Cementitious; Homogeneous	20% Chrysotile	80% Non-Fibrous
			Total Asbestos:	**20%**	
15-04-00078-002	203	--	Blue Paint-Like; Tan/Gray Granular; Inhomogeneous	Trace <1% Chrysotile	5% Cellulose 95% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
2% Chrysotile present in texture material under paint.					
15-04-00078-003	204	--	Blue Paint-Like; Gray Granular; Inhomogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00078-004	205	--	Blue Paint-Like; Gray Granular; Inhomogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00078-005	206	--	Blue Paint-Like; Gray Granular; Inhomogeneous	NAD	3% Cellulose 97% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00078
Project/Test Address: Mill #4; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00078-006	207	--	Blue Paint-Like; Gray Granular; Inhomogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00078-007	208	--	Gray Brittle; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
15-04-00078-008	209	--		Did Not Analyze (Positive Stop)	
15-04-00078-009	210	--		Did Not Analyze (Positive Stop)	
15-04-00078-010	211	--	Black Tar-Like Fibrous; Homogeneous	NAD	80% Cellulose 20% Non-Fibrous
15-04-00078-011	212	--	Black Tar-Like Fibrous; Homogeneous	NAD	80% Cellulose 20% Non-Fibrous
15-04-00078-012	213	--	Black Tar-Like Fibrous; Homogeneous	NAD	80% Cellulose 20% Non-Fibrous
15-04-00078-013	214	--	White Powdery; Homogeneous	4% Chrysotile 25% Amosite	2% Cellulose 69% Non-Fibrous
			Total Asbestos:	**29%**	
15-04-00078-014	215	--		Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00078
Project/Test Address: Mill #4; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00078-015	216	--		Did Not Analyze (Positive Stop)	

QC Sample: 79-M22012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Sami Hosn

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01043

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/09/2015
Reported Date: 04/10/2015

Project/Test Address: Mill #4; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01043-001	439		Off-White Brittle; White Paint-Like; Inhomogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
Chrysotile present throughout.					
15-04-01043-002	440			Did Not Analyze (Positive Stop)	
15-04-01043-003	441			Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01043
Project/Test Address: Mill #4; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 72-M22010-3
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Michelle Swift

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

15 PLM

Asbestos Chain-of-Custody

15-04-00078

Due Date:
04/06/2015
(Monday)
AE

5

Environmental Hazards Services, LLC
www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #4 City/State(required) Veenon, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	202	3/30/15	X	Positive Stop	Transite Panel	See Roster	Bulks
2	203-207	"	"		Plaster Skim Coat	"	"
3	208-210	"	"		Glazing Compound	"	"
4	211-213	"	"		Felt Paper	"	"
5	214-216	"	"		TSI	"	"
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Mullen Signature: CM date: 3/31/15

Received by: T Noonan Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories 3 Pm

Asbestos Chain-of-Custody

15-04-01043

Due Date:
04/13/2015
(Monday)
AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill # 4 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	439-441	4/3	X	Positive Stop	W. G. C.	See Roster	
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Mueller Signature: date: 4/10/15

Received by: Thomas Signature: date: 4/10/15

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 4
VERNON, CT
FORMER "AMERBELLE"

DATE: 03/30/15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
202	TRANSITE PANEL	STAIRWELLS	DAMAGED	FOUR FLOORS
203-207	PLASTER WALL SKIM COAT	>1000ft²/ALL	↓	THROUGH OUT
208-210	WGC	ALL WINDOWS	↓	THROUGH OUT
211-213	FELT	4 FLOORS	↓	UNDER WOOD PLANK FLOORS
214-216	LARGE DIAMETER PIPE T.S.I.	4 SHAFT	↓	NEXT TO CHEM. STRG.
4-3-15 ASSUMED	WGC	4 WINDOWS	DAMAGED	(NO ACCESS) BRIDGE FROM MILL 4 TO MILL 8
ASSUMED	CAULKING	4 WINDOWS	↓	" " "
439-441	WGC	22 WINDOWS/ALL	↓	EXTERIOR (SOME ARE BLOCKED AND/OR BOARDED)

COMMENTS: WGC = Window Glazing Compound

Inspector: B. WOODARD C. MILLER

Page ____ of ____

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: SMALL BLDG @ BACK OF MILL #4 **DATE:** 4/8/15
VERNON, CT
FORMER "AMERACE"

☑ Demo ☑ Pre-Reno ☑ Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
ASSUMED	ROOFING / DEBRIS	ALL	DAMAGED	APPROX 20' x 20' (COLLAPSED)
"	WGC	ALL		WINDOWS
"	CAULKING	ALL		WINDOWS + DOORS
"	SHEETROCK / TRANSITE	ALL		WALLS (INTERIOR
"	FLOORINGS + MASTICS	ALL		INTERIOR. .
"	ADHESIVES (NAWS)	ALL		"
"	PIPE T.S.I.	ALL		"
"	DEBRIS (BUILDING MATERIALS)	ALL	↓	INTERIOR + EXTERIOR DEBRIS PILES
	⊗ BLDG IS NOT ACCESSIBLE (BY GROUND OR OTHER BLDG)			
	⊗ SEE PHOTOS ⊗			

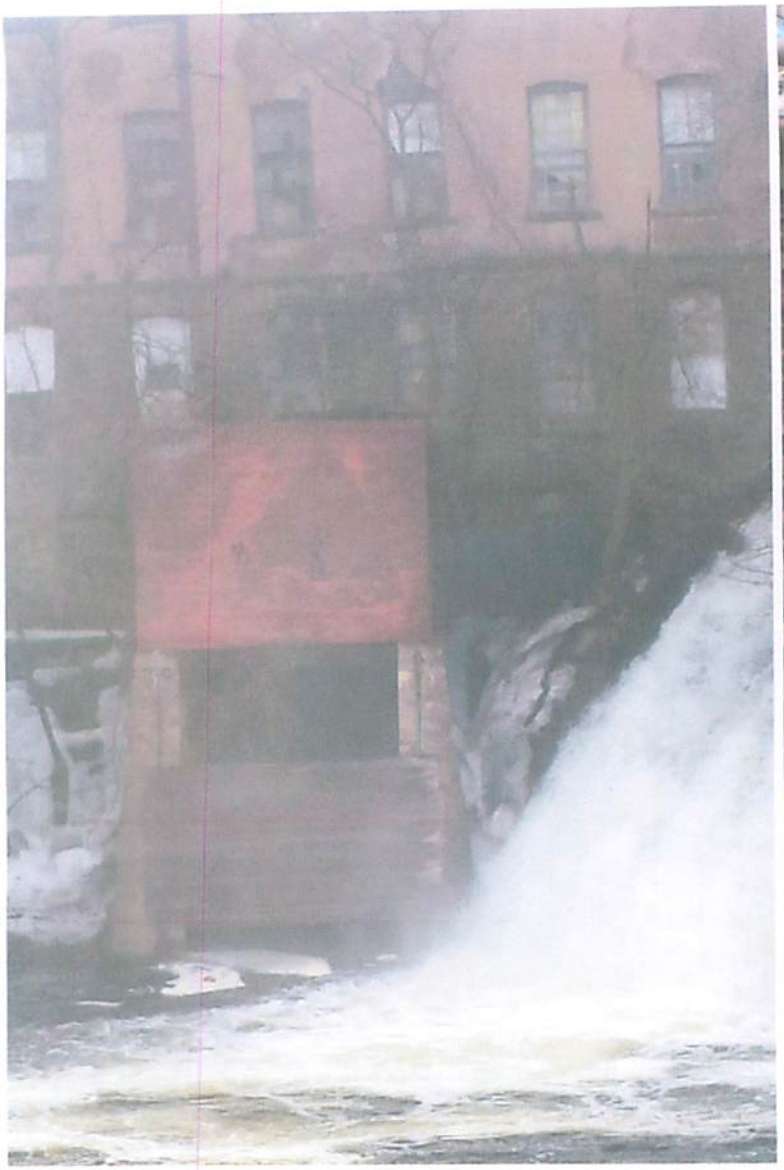
SEEN

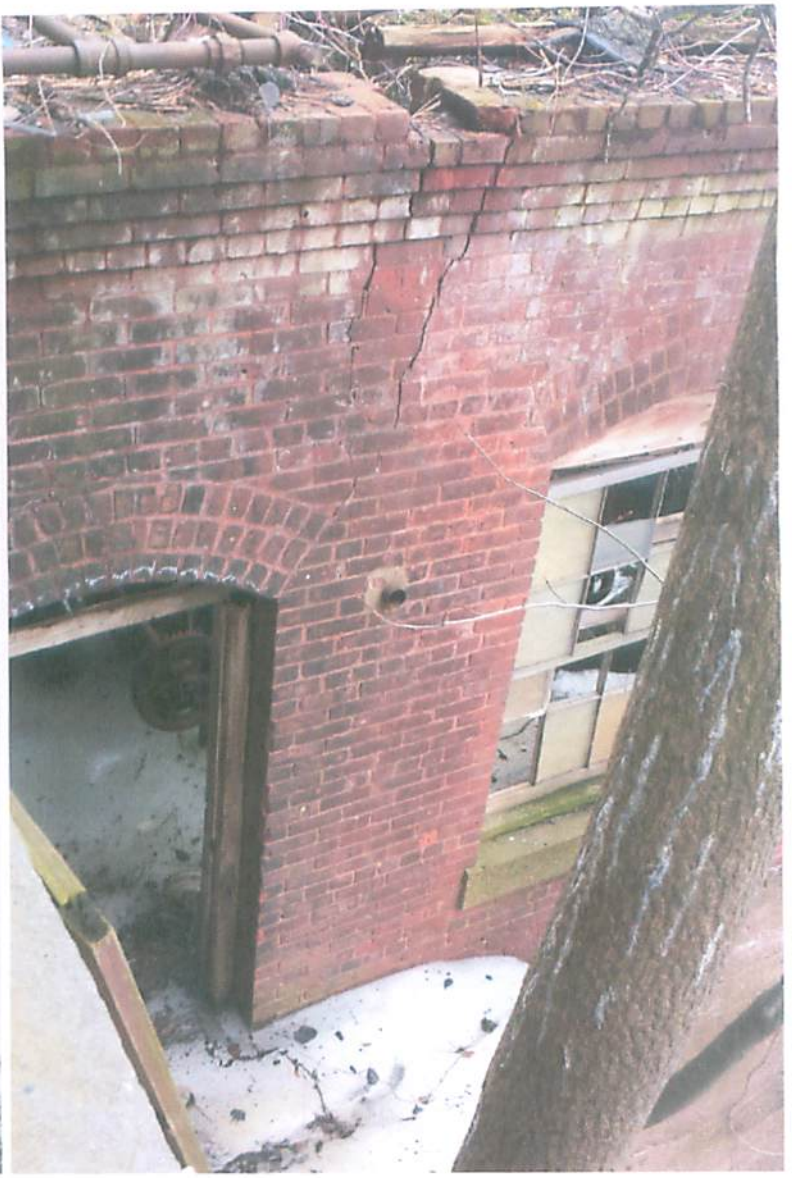
NOT SEEN

COMMENTS: _____

ENCLOSURE 3 PAGE 2 OF 2

Inspector: B. WOODARD C. MULLER Page ____ of ____



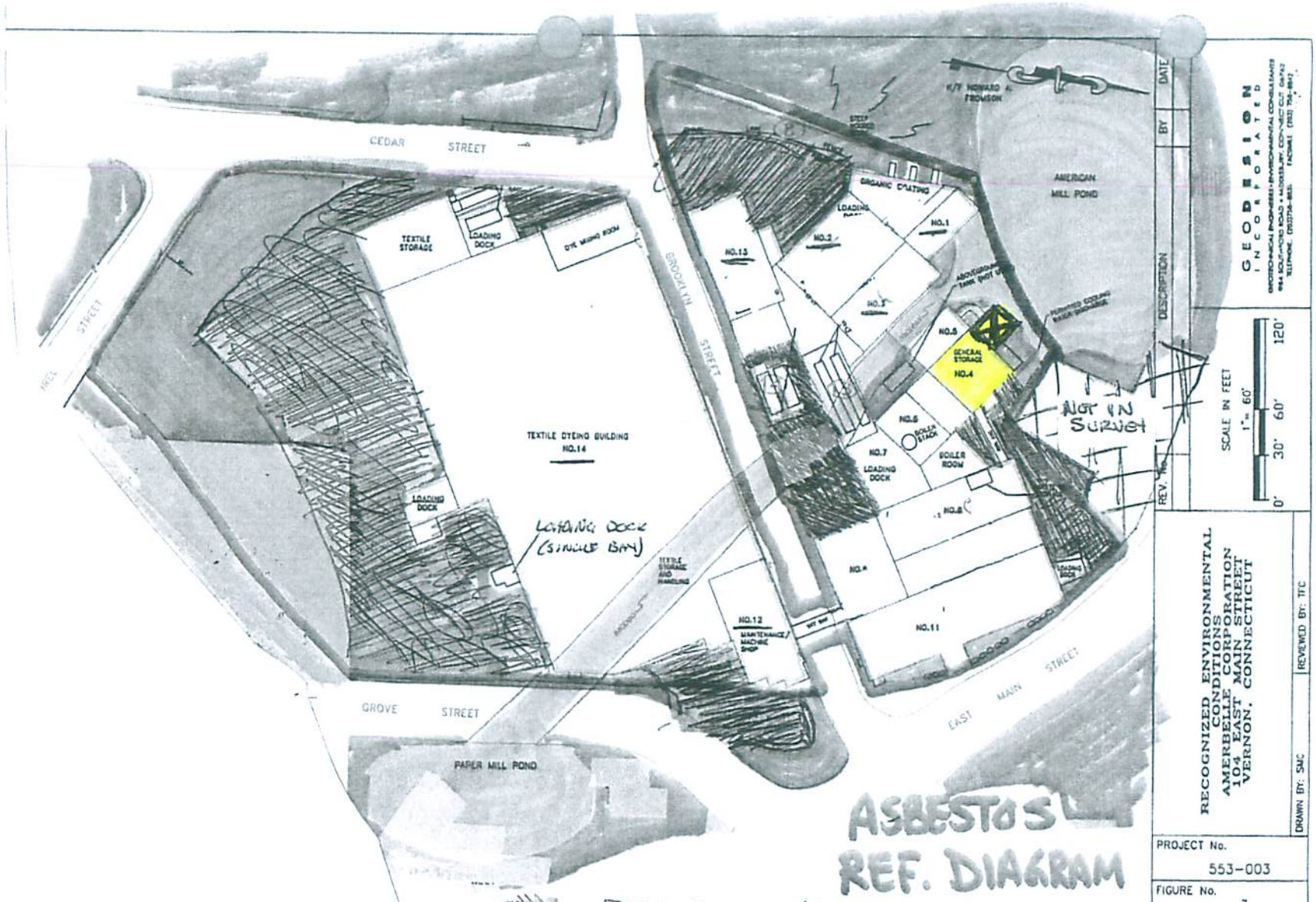


104 East Main Street
Vernon, CT

* Small brick bldg. behind Mill #4. Not accessible.

* Roof has collapsed, all suspect PACM will be assumed.

Suspect PAM Will BE Nearing.
Roof Has Collapsed Air
Mtr #1. Not Accessible.
Smmr Brick Pier. Behind
Lemon, CT
101 East Main Street



ENCLOSURE 4 PAGE 2 OF 2

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00584

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/09/2015
Reported Date: 04/09/2015

Project/Test Address: Mill #4 Vernon, CT

Client Number: 07-2564

Laboratory Results

Fax Number: 860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00584-001	TCLP-Pb	Bldg. Debris	100	<0.50	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

ENCLOSURE 5 PAGE 1 OF 2

1 Pb TCLP

15-04-00584

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #4 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLER Certification Number: N/A Purchase Order Number: GIZA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
		2015	Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
																	COMPOSITE
1	TCLP-Pb	4-3	X														
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: CMULLER Signature: Date/Time: 04-15 / 1600

Date/Time: 4/6/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/30/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

* ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

MILLS 4, 7, 11, 9 + 6 - SAME NOTE AS 3/26

HYGIENIST'S NAME B. WOODWARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 1 OF 3

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED + DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

HYGIENIST'S NAME B. NICODARO C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/08/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

① COURTYARD @ RACEWAY - SAME NOTE AS 3/26

② NO ACCESS STILL TO SMALL BLDG BEHIND MILL #4 (SEE PHOTOS).

HYGIENIST'S NAME B.WOODARD C.MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 3 OF 3

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com maqc2@aol.com 800 247-7746

April 20, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/31/15 & 4/3 & 8/15)**
104 East Main Street; Vernon, CT
Location: Mill #5 & Blue Metal Building (tank storage)

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 31st, April 3rd and 8th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
Mill #5		
380	Pipe T.S.I./@ Ceiling	12 linear ft.
Blue Metal Building (tank storage)		
PACM	Flashing/@ RTU/HVAC (not accessible)	4 penetrations

*****Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled. The Blue Metal Building (tank storage) is Metal & Concrete; it has 2 large tanks with no interior PACM or painted surfaces. No lead TCLP was tested from the Blue Metal Building.**

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials from Mill #5 DO need to be disposed of as lead waste subsequent to demolition. The result of the sample was ABOVE the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Pictures & Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00113

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #5; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00113-001	377		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00113-002	378		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00113-003	379		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00113-004	380		Tan Powder; Homogeneous	17% Chrysotile	13% Cellulose 70% Non-Fibrous

Total Asbestos: 17%

ENCLOSURE 1 PAGE 1 OF 5

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00113
Project/Test Address: Mill #5; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 79-M22012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Christian H. Schaible

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01222

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/09/2015
Analyzed Date: 04/10/2015
Reported Date: 04/14/2015

Project/Test Address: Mill #5; Vernon, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01222-001	532		Off-White to Pale Beige Brittle; Homogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
15-04-01222-002	533		Off-White to Pale Beige Brittle; Homogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
15-04-01222-003	534		Off-White to Pale Beige Brittle; Homogeneous	Trace <1% Chrysotile	1% Cellulose 99% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
15-04-01222-004	535		Black Fibrous; Black Brittle; Dark Gray/Black Aggregate; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
15-04-01222-005	536		Black Fibrous; Black Brittle; Dark Gray/Black Aggregate; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01222

Project/Test Address: Mill #5; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01222-006	537		Black Fibrous; Black Brittle; Dark Gray/Black Aggregate; Inhomogeneous	NAD	40% Cellulose 60% Non-Fibrous
15-04-01222-007	538		Black Fibrous; Homogeneous	NAD	65% Cellulose 35% Non-Fibrous
15-04-01222-008	539		Black Fibrous; Homogeneous	NAD	65% Cellulose 35% Non-Fibrous
15-04-01222-009	540		Black Fibrous; Homogeneous	NAD	65% Cellulose 35% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01222
Project/Test Address: Mill #5; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 74-M22011-2
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Mark Case

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

4PLM

Asbestos Chain-of-Custody

15-04-00113

Due Date:
04/06/2015
(Monday)
AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #5 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	377-379	3/31/15	X	Positive Stop	Skim Coat @ walls	See roster	Bulks
2	380	↓	↓	↓	TSI	↓	↓
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Muller Signature: date: 3/31/15

Received by: Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

09 PLM

Asbestos Chain-of-Custody

15-04-01222

Due Date:
04/14/2015
(Tuesday)
AE
rush

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, CT. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #5 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	532-534	4/8	X	Positive Stop	WGC	SEE ROSTER	
2	535-537	↓	↓	↓	SHINGLE	↓	
3	538-540	↓	↓	↓	FELT	↓	
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Muller Signature: CM date: 4/8/15

Received by: Bonnie King Signature: BKing date: 4-9-15

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 5
VERNON, CT
FORMERL "AMERBELLE"

DATE: 3 / 31 / 15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
377-379	WALL PLASTER SKIM COAT	2000 FT²/ALL	DAMAGED	INTERIOR, WALLS
380	PIPE T.S.I.	12 LNFT	↓	@ CEILING
532-534	W.G.C.	(GLASS) 22/ALL	DAMAGED	EXTERIOR WOOD WINDOWS (SOME ARE BOARDED)
535-537	SHINGLES (BUILT UP)	6000/ALL	↓	ROOF FIELD (TOP)
538-540	FELT	"	↓	" " (BOTTOM)

4-10-1

COMMENTS: W.G.C. = WINDOW GLAZING COMPOUND

Inspector: B. WOODARD
C. MILLER

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # BLUE METAL BLDG (TANK STORAGE) **DATE:** 03/31/15
VERNON, CT
FORMER "AMERABELLE"

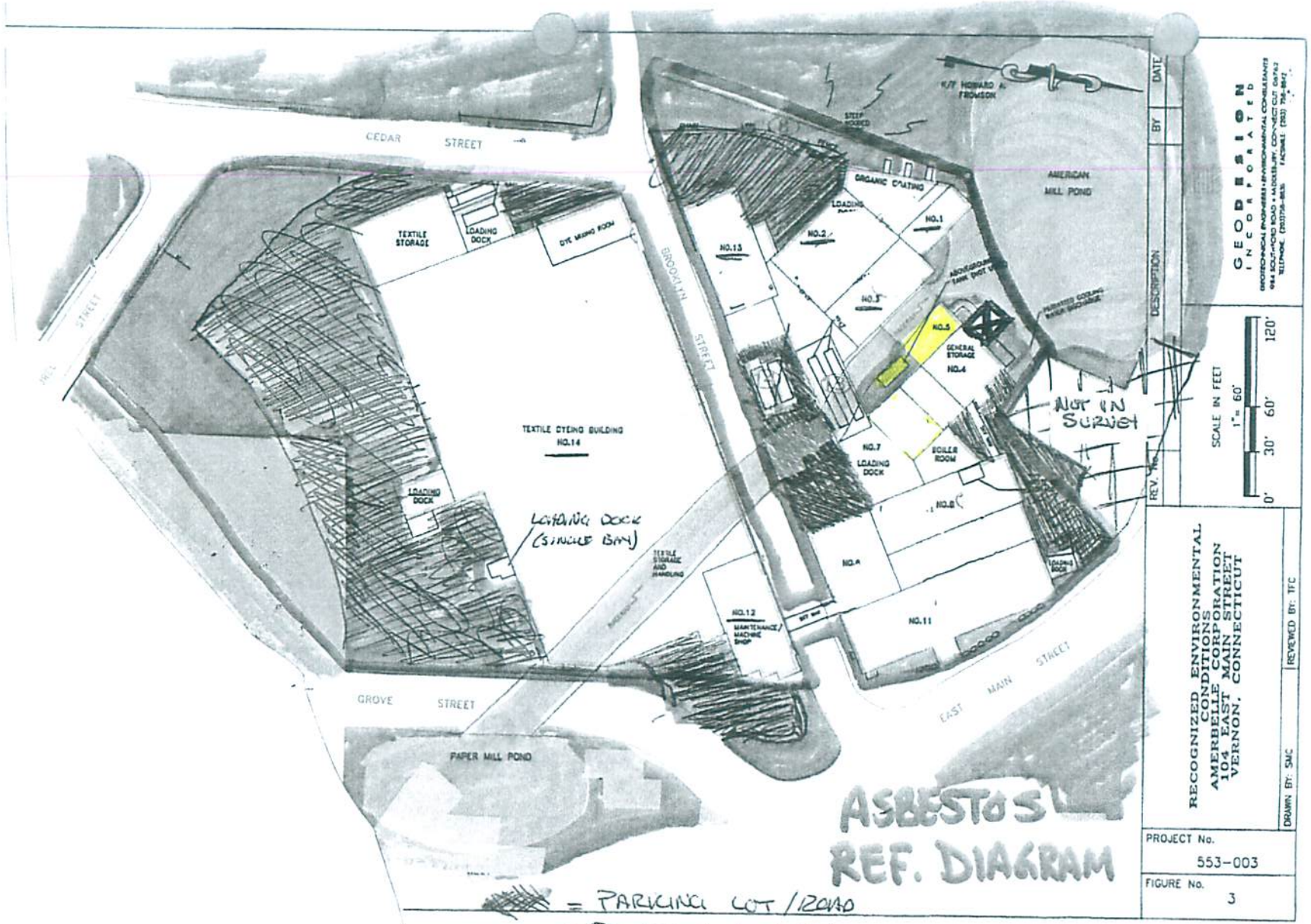
✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
ASSUMED	FLASHING @ RTU	4 PENETRATIONS	DAMAGED	NOT ACCESSIBLE
⊗	BLDG. IS METAL + CONCRETE, NO PAINTED SURFACES.			
	2 → NO TCLP-Pb COLLECTED			

COMMENTS:

ENCLOSURE 3 PAGE 2 OF 2

Inspector: B. WOODARD C. MULLER Page ___ of ___



ASBESTOS REF. DIAGRAM

= PARKING LOT / ROAD
= PROPERTY LINE(S)
= RIVER
= GRASS
= BLDG. # IDENTIFICATION
= NOT PART OF SURVEY

= BLDG. BEHIND MILL #4, NO ACCESS. ROOF HAS COLLAPSED DOOR IS BLOCKED @ MILL #4.

ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00587

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/07/2015
Reported Date: 04/08/2015

Project/Test Address: Mill #5; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00587-001	TCLP-Pb	Bldg. Debris	100	15	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

ENCLOSURE 5 PAGE 2 OF 2

15-04-00587

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #5 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLIN Certification Number: N/A Purchase Order Number: GZIA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
		2015															
1	TCLP-Pb	4-3	X														COMPOSITE
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLIN Signature: C. Mullin Date/Time: 04-15 / 1600

Date/Time: Thomas 4/6/15

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

DAILY JOB LOG

Date 03/31/15

Page 1 of ___

Client GZA

Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

MILLS 5, 8 + SMALL BLDG (BEHIND MILL 4) - SAME NOTE AS 3/26

⊛ BLUE STEEL BLDG. HAS 2 LARGE TANKS WITH NO INTERIOR PACM OR PAINTED SURFACES. SUSPECT RTU/HVAC HAS 4 PENETRATIONS OF SUSPECT ACM.

HYGIENIST'S NAME B. WOODRUFF C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED & DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

HYGIENIST'S NAME B. WOODWARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

PAGE 2 OF 3

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/08/15

DAILY JOB LOG

Page 1 of ___

Client GZA

Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-Pb SAMPLE COLLECTION.

① COURTYARD @ RACEWAY - SAME NOTE AS 3/26

② NO ACCESS STILL TO SMALL BLDG BEHIND MILL #4 (SEE PHOTOS).

ENCLOSURE 6 PAGE 3 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 20, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/31/15 & 4/3 & 6/15)**
104 East Main Street; Vernon, CT
Location: Mill #6

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 31st, April 3rd and 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
336-338	Fitting T.S.I. (green)/Green Painted Line	10 sq. ft.
348-350	T.S.I. (covering)/Top Cover (cap) of Large Boiler	400 sq. ft.
357-359	Block T.S.I./Debris @ Front of Large Boiler	50 sq. ft./All
369-371	T.S.I. (soil floor)/Pipe Chase near Small Boiler	All debris
372	Window Glazing Compound/Near Small Boiler	3 windows
376	Transite Pipe/@Small Boiler –Garage Door	12 linear ft./2 pieces
488	Roof Field (built-up)/Upper Roof @ Larger Boiler	1,800 sq. ft.
489	Roof Field (built-up)/Middle Roof @ Larger Boiler	900 sq. ft.
491	Flashing/Upper Roof @ Larger Boiler	All
492	Flashing/Middle Roof @ Larger Boiler	All
493	Flashing/Lower Roof @ Smaller Boiler	All
PACM	1 Fitting/30' Up Above "Condensate Tank #32"	1 valve

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen approximately in 3" to 10" of ice. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00108

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/02/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #6; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00108-001	327		Brown Fibrous; White Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous
15-04-00108-002	328		Brown Fibrous; White Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous
15-04-00108-003	329		Brown Fibrous; White Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous
15-04-00108-004A	330	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-004B	330	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00108
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00108-005A	331	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-005B	331	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
15-04-00108-006A	332	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-006B	332	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
15-04-00108-007	333		Gray Powder; Homogeneous	NAD	3% Cellulose 1% Fibrous Glass 96% Non-Fibrous
15-04-00108-008	334		Gray Powder; Homogeneous	NAD	3% Cellulose 1% Fibrous Glass 96% Non-Fibrous
15-04-00108-009	335		Gray Powder; Brown Fibrous; Inhomogeneous	NAD	20% Cellulose 1% Fibrous Glass 79% Non-Fibrous
15-04-00108-010	336		Gray Powder; Tan Fibrous; Green Paint; Inhomogeneous	25% Chrysotile 5% Amosite 2% Crocidolite	22% Cellulose 46% Non-Fibrous
			Total Asbestos:	**32%**	

32% asbestos is present in the Gray Powder/Fibrous Insulation.

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00108
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00108-011	337			Did Not Analyze (Positive Stop)	
15-04-00108-012	338			Did Not Analyze (Positive Stop)	
15-04-00108-013	339		Tan Fibrous; Gray Powder; Blue Paint; Inhomogeneous	NAD	1% Cellulose 85% Fibrous Glass 14% Non-Fibrous
15-04-00108-014	340		Tan Fibrous; Gray Powder; Blue Paint; Inhomogeneous	NAD	1% Cellulose 85% Fibrous Glass 14% Non-Fibrous
15-04-00108-015	341		Tan Fibrous; Gray Powder; Blue Paint; Inhomogeneous	NAD	1% Cellulose 85% Fibrous Glass 14% Non-Fibrous
15-04-00108-016	342		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-017	343		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-018	344		Brown Granular; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00108
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00108-019	345		Gray Brittle; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-020	346		Gray Brittle; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-021	347		Gray Brittle; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-022	348		Brown/Tan Powder; Green Paint; Inhomogeneous	21% Chrysotile 2% Amosite	6% Cellulose 71% Non-Fibrous
			Total Asbestos:	**23%**	
23% asbestos is present in the Brown/Tan Powder.					
15-04-00108-023	349			Did Not Analyze (Positive Stop)	
15-04-00108-024	350			Did Not Analyze (Positive Stop)	
15-04-00108-025	351		Tan Fibrous; Brown Powder; Homogeneous	NAD	1% Cellulose 88% Fibrous Glass 11% Non-Fibrous
15-04-00108-026	352		Tan Fibrous; Brown Powder; Homogeneous	NAD	1% Cellulose 88% Fibrous Glass 11% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00108
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00108-027	353		Tan Fibrous; Brown Powder; Homogeneous	NAD	1% Cellulose 88% Fibrous Glass 11% Non-Fibrous
15-04-00108-028	354		Brown Fibrous; Brown Brittle; Homogeneous	NAD	88% Cellulose 12% Non-Fibrous
15-04-00108-029	355		Brown Fibrous; Brown Brittle; Homogeneous	NAD	88% Cellulose 12% Non-Fibrous
15-04-00108-030	356		Brown Fibrous; Brown Brittle; Homogeneous		100% Non-Fibrous
15-04-00108-031	357		Tan Powder; Homogeneous	4% Chrysotile 12% Amosite 6% Crocidolite	78% Non-Fibrous
			Total Asbestos:	**22%**	
15-04-00108-032	358			Did Not Analyze (Positive Stop)	
15-04-00108-033	359			Did Not Analyze (Positive Stop)	
15-04-00108-034	360		Tan Fibrous; Homogeneous	NAD	100% Fibrous Glass

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00108
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00108-035	361		Tan Fibrous; Homogeneous	NAD	100% Fibrous Glass
15-04-00108-036	362		Tan Fibrous; Homogeneous	NAD	100% Fibrous Glass
15-04-00108-037	363		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-038	364		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-039	365		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-040	366		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-041	367		Brown Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-042	368		Brown Granular; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00108
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00108-043	369		Gray Powder; Homogeneous	22% Chrysotile	78% Non-Fibrous
			Total Asbestos:	**22%**	
15-04-00108-044	370			Did Not Analyze (Positive Stop)	
15-04-00108-045	371			Did Not Analyze (Positive Stop)	
15-04-00108-046	372		Brown Brittle; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
15-04-00108-047	373		White Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-048	374		Tan Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-049	375		Tan Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00108-050	376		Gray Cementitious; Homogeneous	18% Chrysotile 8% Crocidolite	74% Non-Fibrous
			Total Asbestos:	**26%**	

ENCLOSURE 1 PAGE 7 OF 11

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00108
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 78-M12012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Christian H. Schaible

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01047

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/10/2015
Reported Date: 04/13/2015

Project/Test Address: Mill #6; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01047-001	442		White Pliable; Gray Granular; Green Paint-Like; Inhomogeneous	NAD	100% Non-Fibrous
15-04-01047-002	488		Black Tar-Like; Fibrous; Silver Paint-Like; Inhomogeneous	20% Chrysotile	15% Cellulose 65% Non-Fibrous
			Total Asbestos:	**20%**	
Chrysotile present throughout.					
15-04-01047-003	489		Black Tar-Like; Fibrous; Inhomogeneous	Trace <1% Chrysotile	30% Cellulose 25% Fibrous Glass 3% Synthetic 2% Hair 40% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
6% chrysotile present in black tar-like material.					
15-04-01047-004	490		Black Tar-Like; Fibrous; Gray Aggregate; Inhomogeneous	NAD	55% Cellulose 2% Hair 43% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01047
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01047-005	491		Black/Black-Gray Tar-Like; Inhomogeneous	8% Chrysotile	10% Cellulose 82% Non-Fibrous
			Total Asbestos:	**8%**	
Chrysotile present in the black -gray tar-like material.					
15-04-01047-006	492		Black Tar-Like; Inhomogeneous	4% Chrysotile	12% Cellulose 84% Non-Fibrous
			Total Asbestos:	**4%**	
Chrysotile present in tar on bottom of sample material.					
15-04-01047-007	493		Black/Black-Gray Tar-Like; Inhomogeneous	7% Chrysotile	10% Cellulose 83% Non-Fibrous
			Total Asbestos:	**7%**	
Chrysotile present throughout.					
15-04-01047-008	494		White Brittle; Dark Green Paint-Like; Inhomogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01047
Project/Test Address: Mill #6; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 75-M22009-3
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Michelle Swift

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

54 PLM

Asbestos Chain-of-Custody

15-04-00108

Due Date: 04/06/2015 (Monday) AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com

City/state/zip: Groton, Ct. 06340

Acct. Number: 07-2564

Project Name and Address: Mill #6 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	327-329	3/31/15	X	Positive Stop	Ceiling tiles	SEE ROSTER	Bulks
2	330-332				Floortile-mastic		
3	333-335				Panel Interior		
4	336-338				TSI		
5	339-341				Canvas wrap		
6	342-344				Plaster-walls		
7	345-347				Glazing Compound		
8	348-350				TSI		
9	351-353	"			Canvas wrap		
10	354-356				Door Canvas		
11	357-359				Block TSI		
12	360-362				Canvas-Door		
13	363-365				Fire Block		
14	366-368				" "		
15	369-371	"	"	"	TSI	"	

Released by: C Mueller Signature: CM date:

Received by: T Mahan Signature: date:

ENCLOSURE 2 PAGE 1 OF 3

ENCLOSURE 2 PAGE 2 OF 3

EHS Laboratories

Asbestos Chain-of-Custody

00108

– For Lab Use Only –

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

* These 4 Samples submitted on separate COC for mill #5. KF 3/1/15

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #6 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	372-	3/3/15	X	Positive Stop	Glazing Compound	SEE ROSTER	BULKS
2	373-375	"	"	"	Caulking	"	"
3	376	"	"	"	Transite pipe	"	"
4	377-379	"	"	"	Skim Coat @ walls	"	X
5	380	"	"	"	TSI	"	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: CMuller Signature: CM date:

Received by: TM 4pm Signature: da

EHS Laboratories

8PLM

Asbestos Chain-of-Custody

15-04-01047

Due Date:
04/13/2015
(Monday)
AE

MS

Environmental Hazards Services, LLC
www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill # 6 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	442	4/3	X	POSITIVE STOP	CAULKING	SEE ROSTER	
2	488	4/6	↓	↓	ROOFING	↓	
3	489	↓	↓	↓	↓	↓	
4	490	↓	↓	↓	↓	↓	
5	491	↓	↓	↓	↓	↓	
6	492	↓	↓	↓	↓	↓	
7	493	↓	↓	↓	↓	↓	
8	494	↓	↓	↓	CAULKING	↓	
9							
10							
11							
12							
13							
14							
15							

Released by: C MULLER Signature: CM date: 4/10/15

Received by: Twhan Signature: date: 4/8/15

ENCLOSURE 2 PAGE 3 OF 3

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 6
VERNON, CT
FORMER "AMERBELLE"

DATE: 03/31/15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
327-329	2x4 CEILING TILE	100 FT²	DAMAGED	OFFICE
330-332	12x12 FLOOR TILE + MASTIC (BLUE/GRN)	100 FT²		"
333-335	PANELING (INTERIORS)	300 FT²		"
336-338	FITTING T.S.I. (GREEN)	10 FT²		GREEN PAINTED LINE
339-341	CANVAS WRAP (BLUE)	500 FT²		BOTTOM OF LARGE BOILER (LEFT + RIGHT)
342-344	PLASTER WALL	>1000 FT²/ALL		THROUGH OUT
345-347	WGC	11 WINDOWS		NEAR LARGE BOILER
348-350	T.S.I (COVERING)	400 FT²		TOP COVER (CAP) OF LARGE BOILER
351-353	CANVAS WRAP (WHITE)	700		LARGE BOILER + DUCTS
354-356	DOOR GASKETS	6 DOORS		TOP OF LARGE BOILER
357-359	BLOCK T.S.I.	50 FT/ALL		DEBRIS @ FRONT OF LARGE BOILER
360-362	DOOR GASKETS	6 DOORS		TOP OF SMALL BOILER
363-365	FIRE BLOCK	SMALL BOILER		INTERIOR OF SMALL BOILER
366-368	FIRE BLOCK	LARGE BOILER		INTERIOR OF LARGE BOILER
369-371	T.S.I. (SOIL FLOOR)	ALL DEBRIS		PIPE CHASE NEAR SMALL BOILER
372	WGC	3 WINDOWS		NEAR SMALL BOILER
373-375	CAULKING	"		" "
376	TRANSITE PIPE	12 LNFT 2 PIECES		@ SMALL BOILER GARAGE DOOR
ASSUMED	1 FITTING	1 VALVE	↓	30' UP ABOVE "CONDENSATE TANK #32"
4-3-15 442	CAULKING	2 WINDOWS	DAMAGED	EXTERIOR @ GARAGE DOOR
4-6-15 488	ROOF FIELD (BUILT UP)	1800 FT²	DAMAGED	UPPER ROOF @ LARGER BOILER
489	" "	900 FT²	↓	MIDDLE ROOF @ LARGER BOILER

COMMENTS: ⊗ DEBRIS IS FROZEN IN FLOOR APROX 3" TO 10" OF ICE
WGC= WINDOW GLAZING COMPOUND

Inspector: B. WOODARD C. MILLER

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #6
VERNON, CT
FORMER "AMERBELLE"

DATE: 4/6/15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
490	ROOF FELT (BUILT UP)			LOWER ROOF @ SMALLER BOILER
491	FLASHING			UPPER ROOF @ LARGER BOILER
492	"			MIDDLE " "
493	"			LOWER ROOF @ SMALLER BOILER
494	CAULKING (PAINTED GREEN)	6 WINDOWS BRIDGE		BRIDGE @ MILL 6 TO MILL 8

COMMENTS: _____

Inspector: B. WOODARD C. MILLER

= Parking Lot Islands

= Property Line(s)

= River

= Gates

= Bldg. # Identification

= Not Part of Survey

☒ = Bldgs. Remina Mill #4 Do Access. Roof Has Collapsed Dock is Blocked @ Mill #4.

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00586

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/07/2015
Reported Date: 04/08/2015

Project/Test Address: Mill #6; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00586-001	TCLP-Pb	Bldg. Debris	100	<0.50	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

ENCLOSURE 5 PAGE 1 OF 2

15-04-00586

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #6 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLEN Certification Number: N/A Purchase Order Number: GIA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM- 10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
		2015															
1	TCLP-Pb	4-3	X														Composite
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLEN Signature: [signature] Date/Time: 04-4/15 / 1600

Date/Time: Thomas 4/6/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants
1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/31/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

MILLS 5, 8 + SMALL BLDG (BEHIND MILL 4) - SAME NOTE AS 3/26

⊗ BLUE STEEL BLDG. HAS 2 LARGE TANKS WITH NO INTERIOR PACM OR PAINTED SURFACES. SUSPECT RTU/HVAC HAS 4 PENETRATIONS OF SUSPECT ACM.

HYGIENIST'S NAME B. WOODWARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

* ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED & DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK & CONCRETE...)

HYGIENIST'S NAME B.WOODARD C.MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

6 3 3

HYGIENIST'S NAME B.WOODWARD C.MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 20, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/30/15 & 4/3 & 6/15)**
104 East Main Street; Vernon, CT
Location: Mill #7

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 30th, April 3rd and 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
505	Flashing (repair)/@ Back Section(s)	120 sq. ft./All
519	Flashing (repair)@ Loading Dock Over-Hang	20 sq. ft.
PACM	Materials/Behind Door #4A	All

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled. There was no access at the blue metal door "4A".

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00080

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #7; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00080-001	217		Gray Powder; Brown Fibrous; White Paint; Inhomogeneous	NAD	20% Cellulose 1% Fibrous Glass 79% Non-Fibrous
15-04-00080-002	218		Gray Powder; Brown Fibrous; White Paint; Inhomogeneous	NAD	2% Cellulose 1% Fibrous Glass 97% Non-Fibrous
15-04-00080-003	219		Gray Powder; Brown Fibrous; White Paint; Inhomogeneous	NAD	20% Cellulose 1% Fibrous Glass 79% Non-Fibrous
15-04-00080-004	220		Silver Paint; Homogeneous	NAD	100% Non-Fibrous
15-04-00080-005	221		Silver Paint; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00080
Project/Test Address: Mill #7; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00080-006	222		Silver Paint; Homogeneous	NAD	100% Non-Fibrous
15-04-00080-007	223		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
15-04-00080-008	224		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous
15-04-00080-009	225		Tan Brittle; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00080
Project/Test Address: Mill #7; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 79-M22012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Christian H. Schaible

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01051

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/09/2015
Reported Date: 04/10/2015

Project/Test Address: Mill #7; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01051-001	504		Black/Brown Fibrous; Black Brittle; Tan/Gray Aggregate; Inhomogeneous	NAD	30% Cellulose 4% Hair 66% Non-Fibrous
15-04-01051-002	505		Black to Dark Gray/Black Brittle; Black Fibrous; Inhomogeneous	15% Chrysotile	15% Cellulose 2% Hair 68% Non-Fibrous
			Total Asbestos:	**15%**	
Chrysotile present in black to dark gray brittle mastic/sealant-type (main) layer.					
15-04-01051-003	519		Black to Dark Gray/Black Pliable to Brittle; Black Fibrous; Inhomogeneous	12% Chrysotile	3% Cellulose 40% Fibrous Glass 45% Non-Fibrous
			Total Asbestos:	**12%**	
Chrysotile present in black to dark gray/black brittle mastic/sealant-type layers.					

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01051
Project/Test Address: Mill #7; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 73-M12009-4
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Mark Case

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

9 PLM

Asbestos Chain-of-Custody

15-04-00080

Due Date:
04/06/2015
(Monday)
AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill # 7 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	217-219	3/30/15	X	Positive Stop	Sheetrock-wall system	See roster	Bulks
2	220-222	〃	〃		Silver paint	〃	〃
3	223-225	〃	〃		Glazing Compound	〃	〃
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Mueller Signature: date: 3/31/15

Received by: Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories

3 PLM

Asbestos Chain-of-Custody

15-04-01051

Due Date:
04/13/2015
(Monday)
AE

MQC

Environmental Hazards Services, LLC
www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill # 7 City/State(required) Veenon, CT

Collected by: B.W. + C.M. Signature Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	504	4/6	X	Positive Stop	Roofing	See Roster	
2	505	↓	↓	↓	↓	↓	
3	519	4/6	X	Positive Stop	Flashing	See Roster	
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Mueller Signature: CM date: 4/6/15

Received by: J Wheaton Signature: date: 4/8/15

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #7
VERNON, CT
FORMER "AMERACE"

DATE: 03/30/15

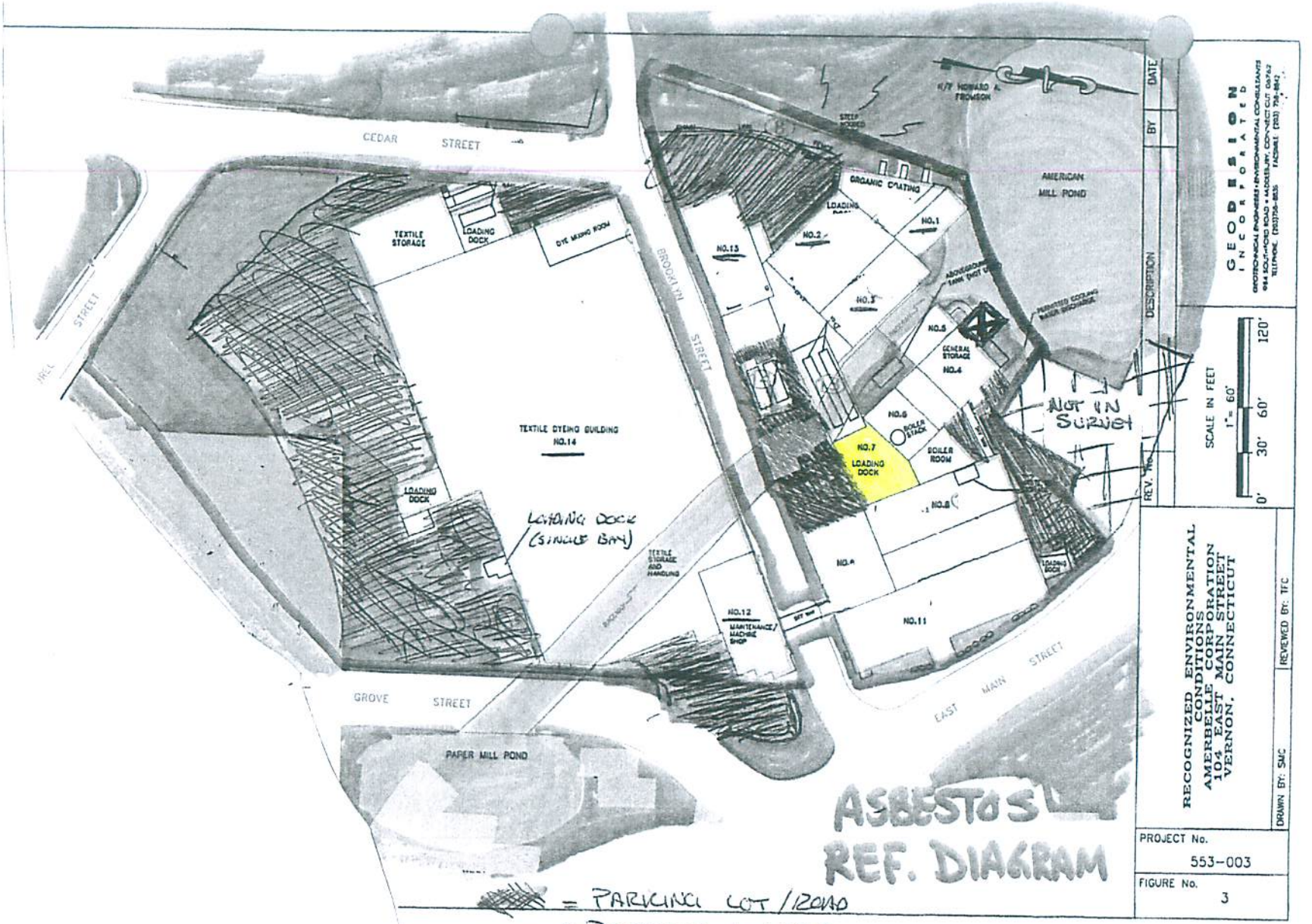
☑ Demo ☑ Pre-Reno ☑ Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
217-219	SHEETROCK WALL SECTION	500 FT²	DAMAGED	ELEC. SWITCH ROOM
220-222	SILVER PAINTED DUCT	>1000 FT²/ALL	↓	DUCT WORK
223-225	WGC	ALL	↓	WINDOWS
???	MATERIALS BEHIND	DOOR "4A" ???		—
504	FIELD (BUILT UP)	900 FT/ALL		FLAT ROOF
505	FLASHING (REPAIR)	120 FT²/ALL		@ BACK SECTION(S)
519	FLASHING (REPAIR)	20 FT²		@ LOADING DOCK OVER-HANG

4-615

COMMENTS: WGC = WINDOW GLAZING COMPOUND
NO ACCESS @ BLUE METAL DOOR "4A"

Inspector: B. WOODARD
C. MULLER



ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00590

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/07/2015
Reported Date: 04/08/2015

Project/Test Address: Mill #7; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00590-001	TCLP-Pb	Bldg. Debris	100	0.87	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

15-04-00590

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #7 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MILLER Certification Number: NA Purchase Order Number: GIZA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected 2015	METALS					OTHER METALS	PARTICULATES					AIR			Comments
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	4-3	X														Composite
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MILLER Signature: Date/Time: 04-14-15 / 1600

Date/Time: Tuesday 4/14/15

ENCLOSURE 5 PAGE 1 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/30/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

MILLS 4, 7, 11, 9 + 6 - SAME NOTE AS 3/26

HYGIENIST'S NAME B. WOODWARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: _____ TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 1 OF 3

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED & DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK & CONCRETE...)

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 2 OF 3

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

* ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

ENCLOSURE 6 PAGE 3 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 20, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/31/15 & 4/3 & 6/15)**
104 East Main Street; Vernon, CT
Location: Mill #8

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 31st, April 3rd and 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
381-383	Window Glazing Compound/Interior (boarded-up) Windows @ stall side	All
385	Transite Panels/All Floors	Stairwell
389-391	Linoleum & Mastic/1st Floor Women's	25 sq. ft.
397-399	Felt Like Backing/1st Floor Men's –floor (bottom layer)	100 sq. ft.
483	Flashing (black)/Exterior –edges & penetrations	200 sq. ft.
485	Shingle/Bridge from Mill 8 to Mill 6	500 sq. ft.
487	Flashing/Bridge from Mill 8 to Mill 6	50 sq. ft.

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00095

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/02/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #8; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00095-001	381		Pale Beige-Gray Brittle; Homogeneous	2% Chrysotile	1% Cellulose 97% Non-Fibrous
			Total Asbestos:	**2%**	
15-04-00095-002	382			Did Not Analyze (Positive Stop)	
15-04-00095-003	383			Did Not Analyze (Positive Stop)	
15-04-00095-004	384		Pale Beige Brittle; Homogeneous	NAD	5% Wollastonite 95% Non-Fibrous
15-04-00095-005	385		Pale Gray Brittle; Homogeneous	18% Chrysotile	82% Non-Fibrous
			Total Asbestos:	**18%**	

ENCLOSURE | PAGE | OF 9

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00095
Project/Test Address: Mill #8; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00095-006	386		Off-White/Pale Beige Brittle; Tan Fibrous; White Pliable to Brittle; Inhomogeneous	NAD	12% Cellulose 8% Fibrous Glass 80% Non-Fibrous
15-04-00095-007	387		Off-White/White Brittle; Tan Fibrous; White Pliable to Brittle; Inhomogeneous	NAD	8% Cellulose 10% Fibrous Glass 82% Non-Fibrous
15-04-00095-008	388		Off-White/White Brittle; Tan/White to Yellow Fibrous; White Pliable to Brittle; Inhomogeneous	NAD	8% Cellulose 12% Fibrous Glass 80% Non-Fibrous
15-04-00095-009A	389	Flooring	Tan/Brown/White Vinyl-Like; Pale Gray Fibrous; Inhomogeneous	18% Chrysotile	5% Cellulose 77% Non-Fibrous
			Total Asbestos:	**18%**	
Chrysotile present in fibrous backing layer.					
15-04-00095-009B	389	Mastic	Off-White to Pale Beige-Gray Adhesive; Homogeneous	2% Chrysotile	5% Cellulose 1% Synthetic 92% Non-Fibrous
			Total Asbestos:	**2%**	
Chrysotile may be present as a contaminant from adjacent fibrous backing layer.					
15-04-00095-010A	390	Flooring		Did Not Analyze (Positive Stop)	
15-04-00095-010B	390	Mastic		Did Not Analyze (Positive Stop)	
15-04-00095-011A	391	Flooring		Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00095
Project/Test Address: Mill #8; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00095-011B	391	Mastic		Did Not Analyze (Positive Stop)	
15-04-00095-012A	392	Cove Base	Dark Brown Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00095-012B	392	Mastic	Yellow Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00095-013A	393	Cove Base	Beige Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00095-013B	393	Mastic	Yellow/Transluscent to Pale Yellow Adhesive; Inhomogeneous	NAD	2% Cellulose 1% Fibrous Glass 1% Synthetic 96% Non-Fibrous
15-04-00095-014A	394	Cove Base	Beige Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00095-014B	394	Mastic	Yellow/Transluscent to Pale Yellow Adhesive; Inhomogeneous	NAD	3% Cellulose 1% Synthetic 96% Non-Fibrous
15-04-00095-015A	395	Cove Base	Beige Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00095
Project/Test Address: Mill #8; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00095-015B	395	Mastic	Yellow/Transluscent to Pale Yellow Adhesive; Inhomogeneous	NAD	2% Cellulose 1% Synthetic 97% Non-Fibrous
15-04-00095-016	396		Brown/White/Off-White Vinyl-Like; Inhomogeneous	NAD	8% Fibrous Glass 92% Non-Fibrous
Insufficient quantity of mastic on flooring sample for analysis of mastic.					
15-04-00095-017	397		Off-White Fibrous; Brown-Gray/White/Blue Brittle; Inhomogeneous	55% Chrysotile	15% Cellulose 30% Non-Fibrous
			Total Asbestos:	**55%**	
Chrysotile present in off-white fibrous (main) layer.					
15-04-00095-018	398			Did Not Analyze (Positive Stop)	
15-04-00095-019	399			Did Not Analyze (Positive Stop)	
15-04-00095-020A	400	Flooring	Beige/White Vinyl-Like; Pale Gray Fibrous; Inhomogeneous	NAD	10% Cellulose 5% Fibrous Glass 10% Synthetic 75% Non-Fibrous
15-04-00095-020B	400	Mastic	Transluscent to Pale Gray Adhesive; Homogeneous	NAD	6% Cellulose 2% Fibrous Glass 2% Synthetic 90% Non-Fibrous
15-04-00095-021	401		Brown Brittle; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00095
Project/Test Address: Mill #8; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00095-022	402		Brown Brittle; Homogeneous	NAD	100% Non-Fibrous
15-04-00095-023	403		Brown Brittle; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00095-024	404		Pale Beige to Off-White Brittle; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00095-025	405		Pale Gray Cementitious; Gray/Off-White Brittle; Inhomogeneous	NAD	2% Cellulose 1% Fibrous Glass 1% Wollastonite 96% Non-Fibrous
15-04-00095-026	406		Pale Gray Cementitious; Gray/Off-White Brittle; Inhomogeneous	NAD	4% Cellulose 1% Fibrous Glass 1% Wollastonite 94% Non-Fibrous
15-04-00095-027	407		Beige to Off-White Brittle; Homogeneous	NAD	1% Wollastonite 99% Non-Fibrous
15-04-00095-028	408		Beige to Off-White Brittle; Homogeneous	NAD	1% Fibrous Glass 99% Non-Fibrous
15-04-00095-029	409		Beige to Off-White Brittle; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00095
Project/Test Address: Mill #8; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 77-M22010-4
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Mark Case

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01042

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/09/2015
Reported Date: 04/10/2015

Project/Test Address: Mill #8; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01042-001	423		Orange Paint-Like; White Rubbery; Inhomogeneous	NAD	100% Non-Fibrous
15-04-01042-002	424		Orange Paint-Like; White Rubbery; Inhomogeneous	NAD	100% Non-Fibrous
15-04-01042-003	425		Orange Paint-Like; White Rubbery; Inhomogeneous	NAD	100% Non-Fibrous
15-04-01042-004	483		Red Paint-Like; Black Tar-Like; Inhomogeneous	10% Chrysotile	90% Non-Fibrous
			Total Asbestos:	**10%**	
Chrysotile present in tar-like material.					
15-04-01042-005	484		Gray Rubbery; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01042
Project/Test Address: Mill #8; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01042-006A	485	Shingle I	Black Aggregate; Tar-Like; Inhomogeneous	2% Chrysotile	35% Cellulose 2% Hair 61% Non-Fibrous
			Total Asbestos:	**2%**	
Chrysotile present in tar-like material bottom of the sample.					
15-04-01042-006B	485	Shingle II	Gray Aggregate; Black Tar-Like; Inhomogeneous	NAD	35% Cellulose 2% Hair 63% Non-Fibrous
15-04-01042-007	486		Tan Aggregate; Black Tar-Like; Inhomogeneous	NAD	35% Cellulose 3% Hair 62% Non-Fibrous
15-04-01042-008	487		Black Tar-Like; Homogeneous	10% Chrysotile	2% Cellulose 88% Non-Fibrous
			Total Asbestos:	**10%**	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01042

Project/Test Address: Mill #8; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 77-M22010-4

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Sami Hosn

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

29 PLM

Asbestos Chain-of-Custody

15-04-00095

Due Date:
04/06/2015
(Monday)
AE

MDE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #8 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	381-383	3/31/15	X	Positive Stop	Glazing Compound	See Roster	Bulks
2	384-				Fire bricks		
3	385				Transite panels		
4	386-388				Sheetrock-wall system		
5	389-391				Linoleum-mastic		
6	392-				Cove base-glue		
7	393-395				" "		
8	396-				Linoleum-mastic		
9	397-399				Paper Backing		
10	400				Linoleum-mastic		
11	401-403				Glazing compound		
12	404-406				" "		
13	407-409	↓	↓		" "	↓	↓
14							
15							

Released by: C Mueller Signature: CM date: 3/31/15

Received by: Tuhqm Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories 8PLM

Asbestos Chain-of-Custody

15-04-01042

Due Date: 04/13/2015 (Monday) AE 9

Environmental Hazards Services, LLC

www.leadlab.com (800)347-4010 (804)275-4907 (fax)

7469 Whitepine Rd Richmond, VA 23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #8 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	423-425	4/3	X	Positive Stop	Caulking	See Roster	
2	483	4/6	↓	↓	Roofing	↓	
3	484	↓			↓		
4	485						
5	486						
6	487	↓	↓	↓	↓	↓	
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Mullen Signature: CM date: 4/6/15

Received by: Thomas Signature: date: 4/8/15

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 8
VERNON, CT
FORMERLY "AMEDRELLE"

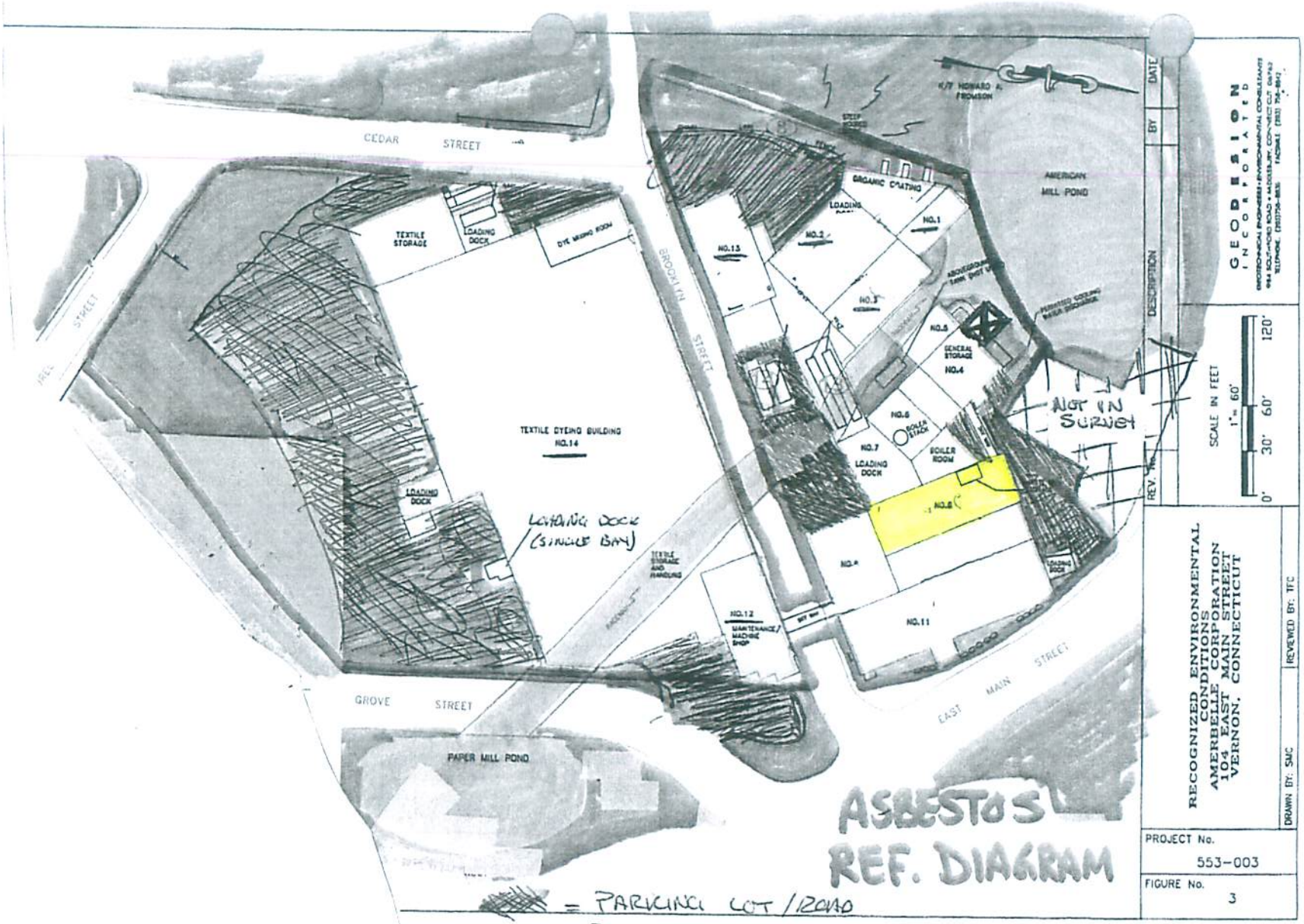
DATE: 03/31/15
✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
381-383	WGC	(SOME MISSING) ALL	DAMAGED	(BOARDED-UP) INTERIOR @ STALL SIDE
384	FIRE BRICKS	40 BRICKS		BASEMENT, : PILED INSIDE WINDOW COVE
385	TRANSITE PANELS	STAIRWELL		ALL FLOORS
386-388	SHEETROCK WALL SYSTEM	500 FT² / ALL		THROUGH OUT
389-391	LINOLEUM + MASTIC	25 FT²		1ST FLOOR WOMENS
392	COVE BASE + ADHESIVE	1 FT².		" "
393-395	COVE BASE + ADHESIVE (WHITE)	12 FT²		1ST FLOOR MENS
396	LINOLEUM + MASTIC	100 FT²		1ST FLOOR MENS (TOP)
397-399	FELT LIKE BACKING	100 FT²		1ST FLOOR MENS (BOTTOM)
400	LINOLEUM + MASTIC	35 FT²		1ST FLOOR COUNTER W/ 2 STOOL AREA, OUTSIDE MENS + WOMENS
401-403	WGC	4 WINDOWS		1ST FLOOR MENS + WOMENS
404-406	WGC	WINDOW 16 BAYS		1ST FLOOR STALL SIDE
407-409	WGC	WINDOW 20 BAYS	↓	1ST FLOOR SHELF SIDE
4-3-15 423-425	CAULKING	ALL	DAMAGED	EXTERIOR
4-6-15 483	FLASHING (BLACK)	200 FT²	DAMAGED	EDGES + PENITRATIONS
484	" (WHITE)	100 FT²		EDGES + BRICK WORK
485	SHINGLE	500 FT²		BRIDGE FROM MILL 8 TO MILL 6
486	FELT	500 FT²		" " "
487	FLASHING	50 FT²	↓	" " "

COMMENTS: WGC = WINDOW GLAZING COMPOUND

ENCLOSURE 3 PAGE 1 OF 1

Inspector: B. WOODARD C. MILLER



ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00920

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/09/2015
Reported Date: 04/09/2015

Project/Test Address: Mill #8; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00920-001	TCLP-Pb	Bldg. Debris	100	0.83	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

1 Pb TCLP

EHS Laboratories

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Metals Chain-of-Custody

15-04-00920

Due Date:
04/09/2015
(Thursday)
AE

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABRESULTS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #8 City/State(required) VERNON, CT

Collected by: B. WOLFARD / C. MIRAND Certification Number: N/A Purchase Order Number: N/A

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*
____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
		2015	Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L/min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLPPb	43	X														Composite
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Signature: B Stone Date/Time: 4-3-15 / 1000

TStone 4/7/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/31/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

MILLS 5, 8 + SMALL BLDG (BEHIND MILL 4) - SAME NOTE AS 3/26

⊗ BLUE STEEL BLDG. HAS 2 LARGE TANKS WITH NO INTERIOR PACM OR PAINTED SURFACES. SUSPECT RTU/HVAC HAS 4 PENETRATIONS OF SUSPECT ACM.

HYGIENIST'S NAME B. WOODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/05/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-Pb SAMPLE COLLECTION.

⊛ TCLP-Pb SAMPLES ARE LIMITED + DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

ENCLOSURE, PAGE 2 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

* ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

ENCLOSURE PAGE 3 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 23, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/30 & 4/3 & 8/15)**
104 East Main Street; Vernon, CT
Location: Mill #9

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 30th, April 3rd and 8th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
291	Transite Panel/Stairwell	All Stairwells

ACM Brown-Green Flooring & Mastic/Mill 9 meets Mill 11, 1st Floor @Offices & Bath 500 sq. ft.
(276-278 from Mill #11)

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00090

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015, 04/04/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #9; Vernon, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-001	291		Gray Cementitious; Homogeneous	35% Chrysotile	65% Non-Fibrous
			Total Asbestos:	**35%**	
15-04-00090-002	292		White Powder; Brown Fibrous; White Granular; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00090-003	293		White Powder; Brown Fibrous; White Granular; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00090-004	294		White Powder; Brown Fibrous; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous

ENCLOSURE 1 PAGE 1 OF 10

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00090
Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-005	295		White Powder; Brown Fibrous; White Granular; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00090-006	296		White Powder; Brown Fibrous; White Paint; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00090-007A	297	Tile	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-007B	297	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00090-008A	298	Tile	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-008B	298	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00090-009A	299	Tile	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-009B	299	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00090
Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-010	300		Brown Fibrous; White Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous
15-04-00090-011	301		Brown Fibrous; White Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous
15-04-00090-012	302		Brown Fibrous; White Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous
15-04-00090-013A	303	Cove Base	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-013B	303	Mastic	Yellow Adhesive; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00090-014A	304	Cove Base	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-014B	304	Mastic	Yellow Adhesive; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00090-015A	305	Cove Base	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00090
Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-015B	305	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00090-016A	306	Tile	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-016B	306	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00090-017A	307	Tile	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-017B	307	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00090-018A	308	Tile	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-018B	308	Mastic	Yellow Adhesive; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00090-019A	309	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-019B	309	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00090

Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-020A	310	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-020B	310	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
15-04-00090-021A	311	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-021B	311	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
15-04-00090-022A	312	Cove Base	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-022B	312	Mastic	Yellow Adhesive; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00090-022C	312	Joint Comp.	White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-023A	313	Cove Base	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-023B	313	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00090

Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-024A	314	Cove Base	Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-024B	314	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00090-025	315		Brown Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00090-026	316		Brown Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00090-027	317		Brown Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00090-028A	318	Cove Base	Black Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-028B	318	Mastic	Brown Adhesive; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00090-029A	319	Cove Base	Black Vinyl; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00090
Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-029B	319	Mastic	Brown Adhesive; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00090-030A	320	Cove Base	Black Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00090-030B	320	Mastic	Brown Adhesive; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00090-031	321		White Powder; Brown Fibrous; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00090-032	322		White Powder; Brown Fibrous; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00090-033	323		White Powder; Brown Fibrous; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00090-034	324		Brown Fibrous; Tan Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous
15-04-00090-035	325		Brown Fibrous; Tan Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00090
Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00090-036	326		Brown Fibrous; Tan Paint; Inhomogeneous	NAD	65% Cellulose 5% Fibrous Glass 30% Non-Fibrous

QC Sample: 79-M22012-1, 74-M22011-2
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Christian H. Schaible

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01219

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/09/2015
Analyzed Date: 04/13/2015
Reported Date: 04/14/2015

Project/Test Address: Mill #9; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01219-001	541		Tan Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-01219-002	542		Blue Vinyl; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01219
Project/Test Address: Mill #9; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 75-M22009-3
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Kathy Fletcher

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories

34 PLM

Asbestos Chain-of-Custody

Due Date:
04/06/2015
(Monday)
AE

Environmental Hazards Services, LLC
www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #9 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	291	3/30/15	X	Positive Stop	Transite Panels	See Roster	Bulks
2	292-296	"	"	"	Sheetrock-Wall system	"	"
3	297-299	"	"	"	Floortile-mastic	"	"
4	300-302	"	"	"	Ceiling tiles	"	"
5	303-305	"	"	"	Covebase-glue	"	"
6	306-308	"	"	"	Floortile-mastic	"	"
7	309-311	"	"	"	" "	"	"
8	312-314	"	"	"	Covebase-glue	"	"
9	315-317	"	"	"	Glue Dabs	"	"
10	318-320	"	"	"	Covebase-glue	"	"
11	321-323	"	"	"	Sheetrock-Ceiling system	"	"
12	324-326	"	"	"	Ceiling tiles	"	"
13							
14							
15							

Released by: CMuller date: 3/31/15

Received by: T. Graham Signature: CM date: 4/1/15

Signature:

EHS Laboratories

2 PLM

Asbestos Chain-of-Custody

15-04-01219

Due Date: 04/14/2015 (Tuesday) AE

IF

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: MILL #9 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature [signature] Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	541	4/8	X	POSITIVE STOP	FLOOR TILE	SEE ROSTER	
2	542	↓	↓	↓	FLOOR TILE	↓	
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C MULLER	Signature: [signature]	date: 4/8/15
Received by: Bonnie King	Signature: BKing	date: 4-9-15

ENCLOSURE 2 PAGE 2 OF 2

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #9
VERNON, CT
FORMERL "AMERBELLE"

DATE: 03/30/15

☑ Demo ☑ Pre-Reno ☑ Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
291	TRANSITE PANEL	ALL/STAIRWELL	DAMAGED	STAIRWELL
292-296	SHEETROCK WALL SYSTEM	1000FT²/ALL		THROUGH OUT
297-299	12X12 FLOOR TILE + MASTIC (WHITE W/ BLACK FLAKE)	150 FT²		3RD FLOOR OFFICES
300-302	2X4 CEILING TILES	2000FT²		THROUGH OUT
303-305	COVE BASE + ADHESIVE (GRAY)	100 FT²		3RD FLOOR OFFICES
306-308	12X12 FLOOR TILE + MASTIC (TAN W/ BROWN FLAKE)	200 FT²		2ND FLOOR OFFICES
309-311	12X12 FLOOR TILE + MASTIC (BLUE/GRAY)	200 FT²		1ST FLOOR OFFICES
312-314	COVE BASE + ADHESIVE (TAN)	100 FT²		" "
315-317	GLUE DAUB (CEILING TILES)	1000 FT²		" "
318-320	COVE BASE + ADHESIVE (BLACK)	100 FT²		" "
321-323	SHEETROCK WALL SYSTEM	>1000 FT²/ALL		" "
324-326	2X4 CEILING TILES	1000 FT²		" "
SAME	276-278 BUILT-UP FLOORING	500 FT²		1ST FLOOR @ OFFICES + BATH — MILL #9
SAME	246-248 12X12 FLOOR TILE + MASTIC (TAN)	500 FT²		1ST FLOOR OFFICES — MEETS WITH MILL #11
SAME	285-287 SILVER BARRIER	ALL	↓	" "
4-8-15 541	TAN 12X12 FLOOR TILE	ALL	DAMAGED	NEAR LOADING DOCK STOCK PILE @ ORANGE DOOR
542	BLUE 12X12 FLOOR TILE.	ALL	↓	" " "

COMMENTS:

ENCLOSURE 3 PAGE 1 OF 1

Inspector: B. WOODARD C. MILLER

ASBESTOS REF. DIAGRAM
= Parcel/Lot/Road
= Property Lines(s)
= River
= Grass
= Building #, Identification
= Not Part of Survey
☒ = Bldg. Remind Mill #4 / Do Access. Roof Has Collapsed Door is Blocked @ Mill #4.
RECOGNIZED ENVIRONMENTAL CONDITIONS
AMERBELLE CORPORATION
104 EAST MAIN STREET
VERNON, CONNECTICUT
DRAWN BY: SMC
REVIED BY: TFC
PROJECT No. 553-003
FIGURE No. 3
GEODESIGN INCORPORATED
SCALE IN FEET
1" = 60'
0' 30' 60' 120'
DESCRIPTION
BY
DATE
AMERBELLE MILL POND
PAPER MILL POND
GROVE STREET
EAST MAIN STREET
CEDAR STREET
BROOK LN
TEXTILE STORAGE
LOADING DOCK
TEXTILE DYE HOUSE AND REMOVED
TEXTILE STORAGE AND REMOVED
MAIN TENANT/ MACHINE SHOP
SCALE ROOM
NO.11
NO.12
NO.13
NO.14
NO.A
NO.1
NO.2
NO.3
NO.4
NO.5
NO.6
NO.7
NO.8
NO.9
NO.10
Asbestos Suspect Materials
Loading Dock (Suspect Asbestos)

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00582

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/09/2015
Reported Date: 04/09/2015

Project/Test Address: Mill #9; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00582-001	TCLP-Pb	Bldg. Debris	100	0.59	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

1 PbTCLP

15-04-00582

Metals Chain-of-Custody

Due Date:
04/09/2015
(Thursday)
AE

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL #9 City/State(required) VERNON, CT

Collected by: B. WOODARD C. MULLIN Certification Number: N/A Purchase Order Number: GZIA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
		2015															
1	TCLP-Pb	4 - 3	X														Composite
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLIN Signature: Date/Time: 04 - 15 / 1600

Date/Time: T. Johnson 4/16/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

DAILY JOB LOG

Date 03/30/15

Page 1 of ___

Client GZA

Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-Pb SAMPLE COLLECTION.

MILLS 4, 7, 11, 9 + 6 - SAME NOTE AS 3/26

HYGIENIST'S NAME B. NICODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 1 OF 3

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED + DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

ENCLOSURE 6 PAGE 2 OF 3

HYGIENIST'S NAME B. NICODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/08/15

DAILY JOB LOG

Page 1 of ___

Client GZA

Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

(1) COURTYARD @ RACEWAY - SAME NOTE AS 3/26

(2) NO ACCESS STILL TO SMALL BLDG BEHIND MILL #4 (SEE PHOTOS).

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 3 OF 3

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com maqc2@aol.com 800 247-7746

April 23, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/30/15 & 4/3 & 6/15)**
104 East Main Street; Vernon, CT
Location: Mill #11

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 30th, April 3rd and 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
236	Transite Panels/2nd Floor Stairwell & Associated Closets	All
276-278	Brown-Green Flooring & Mastic/1st Floor –Admin.	2,100 sq. ft.
288-290	Window Glazing Compound/Windows –basement & stairwell (some windows might be hidden where building merges)	All
417-419	Caulking/Exterior Windows (some boarded or partially there)	All
PACM	Flashing/Roof	All

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00083

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/02/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #11; Vernon, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-001	226		White Paint-Like; Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00083-002	227		White Paint-Like; Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00083-003	228		White Paint-Like; Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00083-004	229		White Paint-Like; Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00083-005	230		White Paint-Like; Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-006	231		White Paint-Like; Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00083-007	232		White Paint-Like; Tan Granular; Inhomogeneous	NAD	2% Hair 98% Non-Fibrous
15-04-00083-008	233		White/Gray Brittle; Inhomogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
<1% Chrysotile present in gray material.					
15-04-00083-009	234		White/Gray Brittle; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00083-010	235		White Paint-Like; Gray Brittle; Inhomogeneous	Trace <1% Chrysotile	100% Non-Fibrous
			Total Asbestos:	**Trace <1%**	
<1% Chrysotile present in gray material.					
15-04-00083-011	236		Gray Fibrous; Homogeneous	35% Chrysotile	65% Non-Fibrous
			Total Asbestos:	**35%**	
15-04-00083-012	237		Blue/Gray Brittle; Inhomogeneous	NAD	65% Cellulose 35% Non-Fibrous
15-04-00083-013	238		Blue/Gray Brittle; Inhomogeneous	NAD	65% Cellulose 35% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-014	239		Blue/Gray Brittle; Inhomogeneous	NAD	65% Cellulose 35% Non-Fibrous
15-04-00083-015A	240	Cove Base	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-015B	240	Mastic	Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-016A	241	Cove Base	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-016B	241	Mastic	Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-017A	242	Cove Base	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-017B	242	Mastic	Gray Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-018A	243	Tile	Gray/Green/Blue Vinyl; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-018B	243	Mastic	Pale Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-019A	244	Tile	Gray/Green/Blue Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-019B	244	Mastic	Pale Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-020A	245	Tile	Gray/Green/Blue Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-020B	245	Mastic	Pale Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-021A	246	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-021B	246	Mastic	Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-022A	247	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-022B	247	Mastic	Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-023A	248	Tile	Gray Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-023B	248	Mastic	Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-024	249		Blue Paint-Like; Gray Chalky; White Granular; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 5% Fibrous Glass 65% Non-Fibrous
15-04-00083-025	250		Gray Chalky; White Granular; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 5% Fibrous Glass 65% Non-Fibrous
No paint present.					
15-04-00083-026	251		Blue Paint-Like; Gray Chalky; White Granular; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 5% Fibrous Glass 65% Non-Fibrous
15-04-00083-027	252		Blue Paint-Like; Gray Chalky; White Granular; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 5% Fibrous Glass 65% Non-Fibrous
15-04-00083-028	253		Blue Paint-Like; Gray Chalky; White Granular; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 5% Fibrous Glass 65% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-029	254		Blue Paint-Like; Gray Chalky; White Granular; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 5% Fibrous Glass 65% Non-Fibrous
15-04-00083-030	255		Blue Paint-Like; Gray Chalky; White Granular; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 5% Fibrous Glass 65% Non-Fibrous
15-04-00083-031	256		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	55% Cellulose 25% Fibrous Glass 20% Non-Fibrous
15-04-00083-032	257		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	55% Cellulose 25% Fibrous Glass 20% Non-Fibrous
15-04-00083-033	258		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	55% Cellulose 25% Fibrous Glass 20% Non-Fibrous
15-04-00083-034A	259	Tile	Gray/Brown Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-034B	259	Mastic	Pale Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-035A	260	Tile	Gray/Brown Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-035B	260	Mastic	Pale Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-036A	261	Tile	Gray/Brown Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-036B	261	Mastic	Pale Yellow Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-037A	262	Cove Base	Blue Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-037B	262	Mastic	Brown/Yellow Adhesive; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00083-038A	263	Cove Base	Blue Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-038B	263	Mastic	Brown/Yellow Adhesive; Inhomogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-039A	264	Cove Base	Blue Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-039B	264	Mastic	Brown/Yellow Adhesive; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00083-040	265		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	55% Cellulose 25% Fibrous Glass 20% Non-Fibrous
15-04-00083-041	266		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	55% Cellulose 25% Fibrous Glass 20% Non-Fibrous
15-04-00083-042	267		White Paint-Like; Gray Fibrous; Inhomogeneous	NAD	55% Cellulose 25% Fibrous Glass 20% Non-Fibrous
15-04-00083-043	268		Gray Chalky; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 70% Non-Fibrous
15-04-00083-044	269		Gray Chalky; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 70% Non-Fibrous
15-04-00083-045	270		Gray Chalky; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 70% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-046	271		Gray Chalky; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 70% Non-Fibrous
15-04-00083-047	272		Gray Chalky; Brown Fibrous; Inhomogeneous	NAD	30% Cellulose 70% Non-Fibrous
15-04-00083-048	273		Brown Brittle Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-049	274		Brown Brittle Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-050	275		Brown Brittle Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-051A	276	Tile I	Brown Vinyl; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
15-04-00083-051B	276	Mastic I	Black Tar-Like; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
Possible contamination from tile.					
15-04-00083-051C	276	Tile II	Green Vinyl; Homogeneous	7% Chrysotile	93% Non-Fibrous
			Total Asbestos:	**7%**	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-051D	276	Mastic II	Black Tar-Like; Tan Adhesive; Inhomogeneous	6% Chrysotile	94% Non-Fibrous
			Total Asbestos:	**6%**	
Chrysotile present in tar-like material.					
15-04-00083-052A	277	Tile I		Did Not Analyze (Positive Stop)	
15-04-00083-052B	277	Mastic I		Did Not Analyze (Positive Stop)	
15-04-00083-052C	277	tile II		Did Not Analyze (Positive Stop)	
15-04-00083-052D	277	Mastic II		Did Not Analyze (Positive Stop)	
15-04-00083-053A	278	Tile I		Did Not Analyze (Positive Stop)	
15-04-00083-053B	278	Mastic I		Did Not Analyze (Positive Stop)	
15-04-00083-053C	278	Tile II		Did Not Analyze (Positive Stop)	
15-04-00083-053D	278	Mastic II		Did Not Analyze (Positive Stop)	
15-04-00083-054A	279	Cove Base	Black Vinyl; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-054B	279	Mastic	Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-055A	280	Cove Base	Black Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-055B	280	Mastic	Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-056A	281	Cove Base	Black Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-056B	281	Mastic	Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-057A	282	Wallboard	Tan Fibrous; Homogeneous	NAD	90% Cellulose 10% Non-Fibrous
15-04-00083-057B	282	Mastic	Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-058A	283	Wallboard	Tan Fibrous; Homogeneous	NAD	90% Cellulose 10% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-058B	283	Mastic	Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-059A	284	Wallboard	Tan Fibrous; Homogeneous	NAD	90% Cellulose 10% Non-Fibrous
15-04-00083-059B	284	Mastic	Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
15-04-00083-060	285		Silver Foil; Brown Fibrous; Black Tar-Like; Inhomogeneous	NAD	65% Cellulose 35% Non-Fibrous
15-04-00083-061	286		Silver Foil; Brown Fibrous; Black Tar-Like; Inhomogeneous	NAD	65% Cellulose 35% Non-Fibrous
15-04-00083-062	287		Silver Foil; Brown Fibrous; Black Tar-Like; Inhomogeneous	NAD	65% Cellulose 35% Non-Fibrous
15-04-00083-063	288		Gray Brittle; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
15-04-00083-064	289			Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00083
Project/Test Address: Mill #11; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00083-065	290			Did Not Analyze (Positive Stop)	

QC Sample: 78-M12012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Sami Hosn

Reviewed By Authorized Signatory: Howard B. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01041

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/10/2015
Reported Date: 04/13/2015

Project/Test Address: Mill #11

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01041-001	417	--	Gray Granular; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
15-04-01041-002	418	--		Did Not Analyze (Positive Stop)	
15-04-01041-003	419	--		Did Not Analyze (Positive Stop)	
15-04-01041-004	420	--	Gray Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-01041-005	421	--	Gray Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-01041-006	422	--	Gray Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01041
Project/Test Address: Mill #11

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01041-007	478	--	Black Tar-Like; Fibrous; Black Aggregate; Inhomogeneous	NAD	60% Cellulose 10% Synthetic 30% Non-Fibrous
15-04-01041-008	479	--	Black Tar-Like; Fibrous; Homogeneous	NAD	50% Cellulose 10% Synthetic 40% Non-Fibrous
15-04-01041-009	480	--	Black Tar-Like; Fibrous; Black Aggregate; Inhomogeneous	NAD	2% Cellulose 28% Fibrous Glass 70% Non-Fibrous
15-04-01041-010	481	--	Black Tar-Like; Fibrous; Homogeneous	NAD	80% Cellulose 10% Synthetic 10% Non-Fibrous
15-04-01041-011	482	--	Black Tar-Like; Fibrous; Black Aggregate; Inhomogeneous	NAD	2% Cellulose 28% Fibrous Glass 70% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01041
Project/Test Address: Mill #11

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 74-M22011-2
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Timothy Harris

Reviewed By Authorized Signatory: Howard D. Varner

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

65 3 PLM

Asbestos Chain-of-Custody

15-04-00083

Due Date: 04/06/2015 (Monday) AE

Environmental Hazards Services, LLC

www.leadlab.com (800)347-4010 (804)275-4907 (fax)

7469 Whitepine Rd Richmond, VA 23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill # 11 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	226-232	3/30/15	X	Positive Stop	Plaster skim Coat	See Roster	Bulks
2	233-235				Glazing Compound		
3	236-				Transite Panels		
4	237-239				Counter tops		
5	240-242				Covebase-glue		
6	243-245				Floortile-mastic		
7	246-248				" "		
8	249-255				Sheetrock-wall system		
9	256-258				Ceiling tiles		
10	259-261				Floortile-mastic		
11	262-264				Cavebase-glue		
12	265-267				Ceiling tiles		
13	268-272				Sheetrock-Ceiling System		
14	273-275				Glue Dabs		
15	276-278	✓	✓	✓	Built-up Flooring-glue	✓	✓

Released by: C Mueller Signature: CM date: 3/31/15

Received by: T Lohan Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 3

EHS Laboratories

12 PLM

Asbestos Chain-of-Custody

0083

– For Lab Use Only –

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: MILL #11 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	279-281	3/30/15	X	POSITIVE STOP	CorebASe-glue	SEE ROSTER	BULKS
2	282-284				wallpaneling-Adhesive		
3	285-287				Silver Barrier		
4	288-290	"	"	"	Glazing Compound	"	X
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: CMUELLER Signature: CM date: 3/31/15

Received by: TJohann Signature: date: 4/1/15

EHS Laboratories

10 PLM

Asbestos Chain-of-Custody

15-04-01041

Due Date:
04/13/2015
(Monday)
AE

T

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: MILL # 11 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	417-419	4/3	X	POSITIVE STOP	CAULKING	SEE ROSTER	
2	420-422	↓	↓	↓	W.G.C.	↓	
3	478	4/6			ROOFING		
4	479	↓			↓		
5	480						
6	481	↓	↓	↓	↓	↓	
7	* 482						
8	Added sample #						
9	Chain of custody per						
10	Chris. TAM 4/8/15						
11							
12							
13							
14							
15							

Released by: C MULLER Signature: CM date: 4/8/15

Received by: Trahan Signature: date: 4/8/15

ENCLOSURE 2 PAGE 3 OF 3

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 11
VERNON, CT
FORMER "AMERACE"

DATE: 03/30/15
✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
226-232	SKIM COAT PLASTER) WALLS	2000 FT² / ALL	DAMAGED	THROUGH OUT
233-235	WGC	ALL WOOD WINDOWS		EXTERIOR
236	TRANSITE PANELS	STAIRWELL + ASSOCIATED CLOSETS		2ND FLOOR
237-239	COUNTER TOPS (BLUE)	700 FT²		1ST FLOOR LAB.
240-242	COVE BASE + ADHESIVE (GRAY)	150 FT²		" "
243-245	12x12 FLOOR TILE + MASTIC (GRAY)	800 FT²		" "
246-248	12x12 FLOOR TILE + MASTIC (TAN)	1800 FT²		" "
249-255	SHEETROCK WALL SYSTEM	4000 FT² / ALL		" " + ADMIN,
256-258	2x4 CEILING TILES (HOLES W/ CRATERS)	2000 FT²		1ST FLOOR LAB.
259-261	12x12 FLOOR TILE + MASTIC (BROWN)	2900 FT²		1ST FLOOR ADMIN. (TOP)
262-264	COVE BASE + ADHESIVE 6" (GRAY)	400 FT²		1ST FLOOR ADMIN.
265-267	2x4 CEILING TILES (PIN HOLES + LINES)	200 FT²		" "
268-272	SHEETROCK CEILING SYSTEM	2500 FT² / ALL		" "
273-275	GLUE DAUBS (1X1 CEILING TILES)	2000 FT²		" " (ABOVE DROP CEILING)
276-278	BUILT-UP FLOOR TILE + MASTICS (BROWN - GREEN ...)	2100 FT²		1ST FLOOR ADMIN.
279-281	COVE BASE + ADHESIVE (BLACK)	400 FT²		" "
282-284	ADHESIVE (WALL PANELS)	ALL		" "
285-287	SILVER BARRIER	ALL		" " (BEHIND WALL PANELS)
288-290	WGC	11 SEEN / ALL	↓	(WINDOWS MIGHT BE HIDDEN @ BLDG. MERGES) BASEMENT + STAIRWELL
4-3-15 417-419	CAULKING	ALL	DAMAGED	EXTERIOR } MANY BOARDED WINDOWS SOME ARE PARTIAL
420-422	WGC	ALL	↓	" " } WINDOWS SOME ARE MISSING ENTIRELY
4-6-15 478	SHINGLE	60 FT²	DAMAGED	HVAC OVERHANG (FRONT @ GROUND) (TOP)

COMMENTS: WGC = WINDOW GLAZING COMPOUND

Inspector: B. WOODARD C. MULLEN

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #11
VERNON, CT
FORMER "AMERBELLE"

DATE: 4/6/15

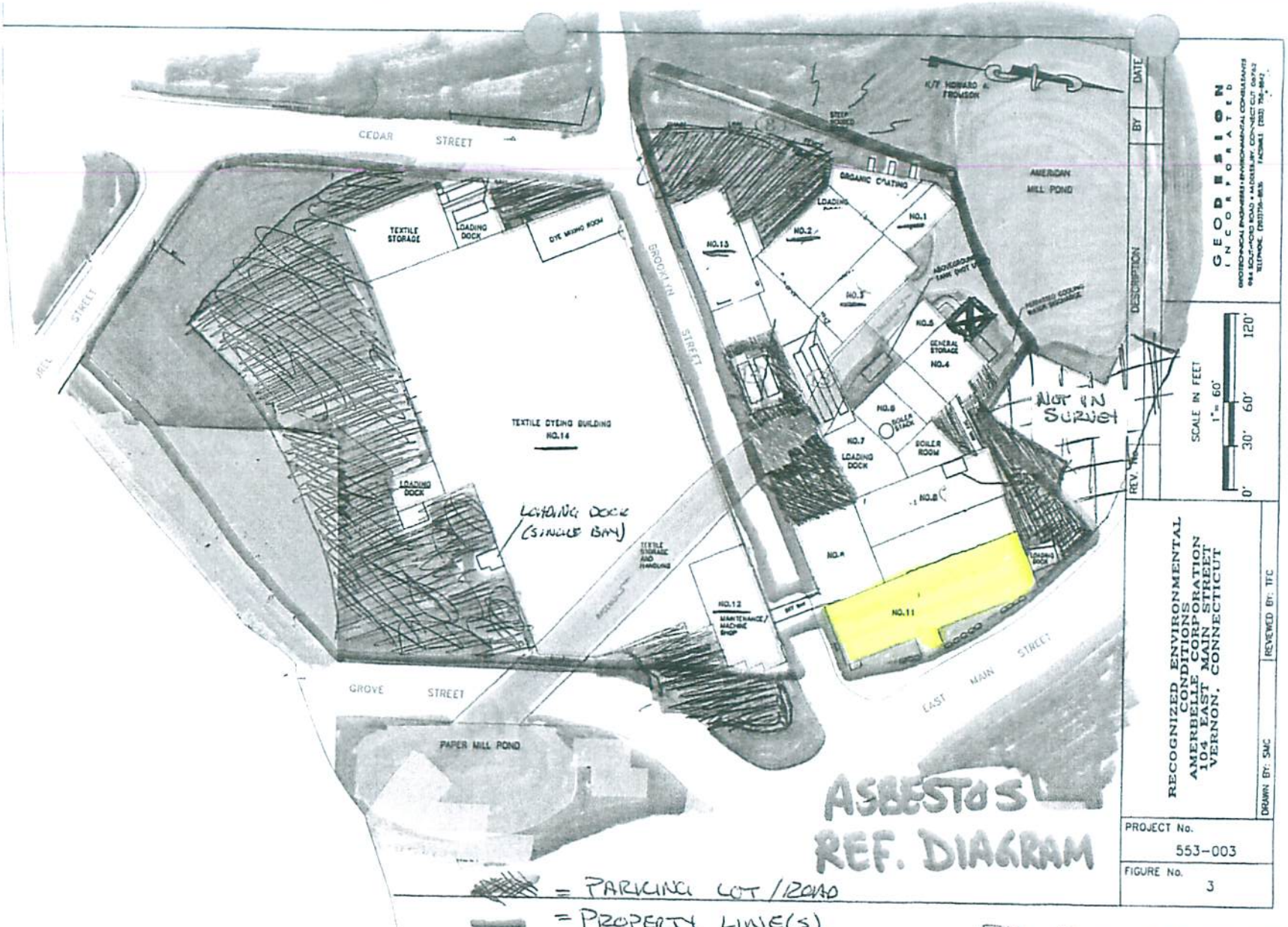
✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
479	FELT	80 FT²	DAMAGED	HVAC OVERHANG (FRONT & GROUND) (BOTTOM)
480	SHINGLE	20000/ALL		HIGH ROOF, FIELD (TOP)
481	FELT	"		HIGH ROOF, EDGES + PENETRATIONS (BOTTOM)
482	VALLEY (ROLLED)	200 LN FT		HIGH ROOF, VALLEYS
ASSUMED	FLASHING (IF ANY?)	ALL		(NONE SEEN FROM SIDES)

COMMENTS:

ENCLOSURE 3 PAGE 2 OF 2

Inspector: B. WOODARD C. MILLER



ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00583

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/09/2015
Reported Date: 04/09/2015

Project/Test Address: Mill #11; Vernon, CT

Client Number: 07-2564

Laboratory Results

Fax Number: 860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00583-001	TCLP-Pb	Bldg. Debris	100	<0.50	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

15-04-00583

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL # 11 City/State(required) VERNON, CT

Collected by: B. WOODARD C. MILLER Certification Number: N/A Purchase Order Number: GZA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected 2015	METALS					OTHER METALS	PARTICULATES					AIR			Comments
			Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	4-3	X														Composite
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MILLER Signature: Date/Time: 04-15 / 1600

Date/Time: Thomas 4/6/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

DAILY JOB LOG

Date 03/30/15

Page 1 of ___

Client GZA

Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-Pb SAMPLE COLLECTION.

MILLS 4, 7, 11, 9 + 6 - SAME NOTE AS 3/26

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 1 OF 3

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

DAILY JOB LOG

Date 04/03/15

Page 1 of ___

Client GZA

Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-Pb SAMPLE COLLECTION.

- ⊛ TCLP-Pb SAMPLES ARE LIMITED + DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

ENCLOSURE 6 PAGE 2 OF 3

HYGIENIST'S NAME B. LUCCIARDO C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

DAILY JOB LOG

Date 04/06/15

Page 1 of ___

Client GZA

Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS

Containment Location - SAME -

• ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

ENCLOSURE 6 PAGE 3 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE:

TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com maqc2@aol.com 800 247-7746

April 23, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/26 & 31/15 & 4/6/15)**
104 East Main Street; Vernon, CT
Location: Mill #12

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 26th, 31st and April 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
118-120	Caulking/Exterior Windows & 3 Interior Windows	43 windows/ 7 doors
126-128	9x9 Flooring (green)/1st Floor Storage	150 sq. ft.
129-131	9x9 Flooring (black)/1st Floor Storage	150 sq. ft.
470-472	Caulking/Exterior @ CMU Blocked Windows	10 windows
PACM	Roofing/Bridge from Mill 12 to Mill 11 (no access, EPDM is top)	All
PACM	Flashing/Bridge from Mill 12 to Mill 11 (no access, EPDM is top)	All

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00068

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/02/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #12; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-001	118		Gray Granular; Fibrous; Homogeneous	15% Chrysotile	15% Cellulose 10% Fibrous Glass 60% Non-Fibrous
			Total Asbestos:	**15%**	
15-04-00068-002	119			Did Not Analyze (Positive Stop)	
15-04-00068-003	120			Did Not Analyze (Positive Stop)	
15-04-00068-004	121		Green/Gray Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-005	122		Gray/White Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

ENCLOSURE 1 PAGE 1 OF 10

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00068
Project/Test Address: Mill #12; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-006	123		Beige/Gray Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-007	124		Gray Pliable; White Paint-Like; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-008	125		White Pliable; Homogeneous	NAD	100% Non-Fibrous
15-04-00068-009A	126	Linoleum	Gray/Black Vinyl-Like; Black Tar-Like; Fibrous; Inhomogeneous	2% Chrysotile	40% Cellulose 10% Synthetic 48% Non-Fibrous
			Total Asbestos:	**2%**	
Chrysotile present in gray/black vinyl-like material.					
15-04-00068-009B	126	Mastic	Black Tar-Like; Fibrous; Homogeneous	NAD	80% Cellulose 10% Synthetic 10% Non-Fibrous
15-04-00068-010A	127	Linoleum		Did Not Analyze (Positive Stop)	
15-04-00068-010B	127	Mastic	Brown Brittle; Homogeneous	NAD	2% Cellulose 3% Synthetic 95% Non-Fibrous
15-04-00068-011A	128	Linoleum		Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00068
Project/Test Address: Mill #12; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-011B	128	Mastic	Brown Brittle; Homogeneous	NAD	2% Cellulose 3% Synthetic 95% Non-Fibrous
15-04-00068-012A	129	Linoleum	Black Vinyl-Like; Black Tar-Like Fibrous; Inhomogeneous	2% Chrysotile	40% Cellulose 10% Synthetic 48% Non-Fibrous
			Total Asbestos:	**2%**	
Chrysotile present in black vinyl-like material.					
15-04-00068-012B	129	Mastic	Brown Brittle; Homogeneous	NAD	2% Cellulose 3% Synthetic 95% Non-Fibrous
15-04-00068-013A	130	Linoleum		Did Not Analyze (Positive Stop)	
15-04-00068-013B	130	Mastic	Brown Brittle; Homogeneous	NAD	2% Cellulose 3% Synthetic 95% Non-Fibrous
15-04-00068-014A	131	Linoleum		Did Not Analyze (Positive Stop)	
15-04-00068-014B	131	Mastic	Brown Brittle; Homogeneous	NAD	2% Cellulose 3% Synthetic 95% Non-Fibrous
15-04-00068-015A	132	Tile	Gray Granular; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00068
Project/Test Address: Mill #12; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-015B	132	Mastic	Beige Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-016A	133	Tile	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00068-016B	133	Mastic	Beige Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-017A	134	Tile	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00068-017B	134	Mastic	Beige Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-018A	135	Cove Base	Gray Rubbery; Homogeneous	NAD	100% Non-Fibrous
15-04-00068-018B	135	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-019A	136	Cove Base	Gray Rubbery; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00068
Project/Test Address: Mill #12; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-019B	136	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-020A	137	Cove Base	Gray Rubbery; Homogeneous	NAD	100% Non-Fibrous
15-04-00068-020B	137	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-021A	138	Linoleum	Gray Fibrous; Gray Vinyl-Like; Inhomogeneous	NAD	30% Cellulose 10% Fibrous Glass 60% Non-Fibrous
15-04-00068-021B	138	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 3% Synthetic 95% Non-Fibrous
15-04-00068-022A	139	Linoleum	Gray Fibrous; Beige Vinyl-Like; Inhomogeneous	NAD	30% Cellulose 10% Fibrous Glass 60% Non-Fibrous
15-04-00068-022B	139	Mastic	White Adhesive; Homogeneous	NAD	2% Cellulose 2% Fibrous Glass 96% Non-Fibrous
15-04-00068-023A	140	Cove Base	Brown Rubbery; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00068
Project/Test Address: Mill #12; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-023B	140	Mastic	Brown/Yellow Brittle; Inhomogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00068-024	141		Beige Granular; Black Brittle; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-025	142		Beige Granular; Black Brittle; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-026	143		Beige Granular; Black Brittle; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-027	144		Gray Fibrous; White Paint-Like; Inhomogeneous	NAD	50% Cellulose 35% Fibrous Glass 5% Synthetic 10% Non-Fibrous
15-04-00068-028	145		Gray Fibrous; White Paint-Like; Inhomogeneous	NAD	50% Cellulose 35% Fibrous Glass 5% Synthetic 10% Non-Fibrous
15-04-00068-029	146		Gray Fibrous; White Paint-Like; Inhomogeneous	NAD	50% Cellulose 35% Fibrous Glass 5% Synthetic 10% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00068
Project/Test Address: Mill #12; Vernon, CT

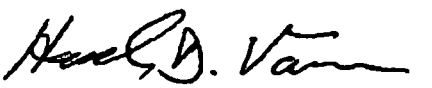
Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-030	147		White Granular; White Paint-Like; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00068-031	148		White Chalky; Brown Fibrous; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
15-04-00068-032	149		White Chalky; Brown Fibrous; White Granular; White Paint-Like; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
15-04-00068-033	150		Gray Cementitious; White Brittle; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00068-034	151		Gray Cementitious; White Brittle; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00068-035	152		Gray Cementitious; White Brittle; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00068-036	153		White Pliable; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-037	154		Gray Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00068
Project/Test Address: Mill #12; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00068-038	155		White Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00068-039	156		White Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

QC Sample: 79-M22012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Timothy Harris

Reviewed By Authorized Signatory: 

Howard Varner
General Manager

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01038

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/09/2015
Reported Date: 04/10/2015

Project/Test Address: Mill #12; Vernon, CT

Client Number: 07-2564

Fax Number: 860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01038-001	470		Black Tar-Like; Homogeneous	NAD	15% Cellulose 85% Non-Fibrous
15-04-01038-002	471		Black Tar-Like; Homogeneous	10% Chrysotile	90% Non-Fibrous
			Total Asbestos:	**10%**	
15-04-01038-003	472			Did Not Analyze (Positive Stop)	
15-04-01038-004	473		Gray Rubbery; Granular; Inhomogeneous	NAD	100% Non-Fibrous
15-04-01038-005	474		Gray Rubbery; Granular; Inhomogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01038
Project/Test Address: Mill #12; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01038-006	475		Gray Rubbery; Granular; Inhomogeneous	NAD	100% Non-Fibrous
15-04-01038-007	476		Black Tar-Like; Fibrous; Inhomogeneous	NAD	5% Cellulose 50% Fibrous Glass 45% Non-Fibrous
15-04-01038-008	477		Black Tar-Like; Fibrous; Inhomogeneous	NAD	3% Cellulose 52% Fibrous Glass 45% Non-Fibrous

QC Sample: 72-M22010-3
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Michelle Swift

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

38 PLM

Asbestos Chain-of-Custody

15-04-00068

Due Date: 04/06/2015 (Monday) AE T

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill # 12 City/State(required) Veenon, CT

Collected by: B.W. + C.M. Signature [signature] Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	118-120	3/26/15	X	Positive Stop	Caulking	See Roster	Bulks
2	121-123				Glazing Compound		
3	124-				Caulking		
4	125-				" "		
5	126-128				Floortile-mastic		
6	129-131				" "		
7	132-134				" "		
8	135-137				Covebase-glue		
9	138-				Linoleum-mastic		
10	139-				" "		
11	140-				Covebase-glue		
12	141-143				Glazing Compound		
13	144-146				Ceiling tiles		
14	147-149				Sheetrock-wall system		
15	150-153	↓	↓	↓	Caulking	↓	↓

Released by: C Muller Signature: [signature] date: 3/31/15

Received by: Twohgm Signature: [signature] date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 3

EHS Laboratories

Asbestos Chain-of-Custody

0063

– For Lab Use Only –

Environmental Hazards Services, LLC
www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #13 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	154-156	3/26/15	X	Positive Stop	Glazing Compound	SEE ROSTER	Bulks
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C MULLER Signature: CM date: 3/31/15

Received by: Thogan Signature: date: 4/1/15

ENCLOSURE 2 PAGE 2 OF 3

EHS Laboratories

8 PLM

Asbestos Chain-of-Custody

15-04-01038

Due Date:
04/13/2015
(Monday)
AE

MS

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340

City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com

Acct. Number: 07-2564

Project Name and Address: Mill #12 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature

Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	470-472	4/6	X	POSITIVE STOP	CAULKING	SEE ROSTER	
2	473-475	↓	↓	↓	FLASHING	↓	
3	476-477	↓	↓	↓	FIELD	↓	
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C MULLER Signature: CM date: 4/10/15

Received by: Thora Signature: date: 4/18/15

ENCLOSURE 2 PAGE 3 OF 3

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #12
VERNON, CT
FORMER "AMERBELLE"

DATE: 03/26/15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
118-120	CAULKING	43 WINDOWS 7 DOORS	DAMAGED	EXTERIOR (3 WINDOWS ARE NOW INTERIOR)
121-123	WGC	43 WINDOWS 6 DOORS		" "
124	CAULKING	1 DOOR		BASEMENT TO ROAD
125	CAULKING	1 DOOR		1ST FLOOR GOING TO BLDG #14
126-128	9"x9" FLOOR TILE + MASTIC (GREEN)	150 FT²		1ST FLOOR STORAGE
129-131	" ↓ " (BLACK)	150 FT²		" "
132-134	FLOOR TILE + MASTIC (GRAY)	175 FT²		1ST FLOOR OFFICE
135-137	COVE BASE + ADHESIVE (GRAY)	10 FT²		" "
138	LINOLEUM + MASTIC (GRAY)	150 FT²		NEXT TO 1ST FLOOR OFFICE
139	" ↓ " (YELLOW)	15 FT²		1ST FLOOR BATH
140	COVE BASE + ADHESIVE	3 FT²		" " "
141-143	WGC	43 WINDOWS		INTERIOR
144-146	2x4 CEILING TILE	150 FT²		1ST FLOOR OFFICE
147-149	SHEETROCK WALL SYSTEM	>1000 FF/ALL		THROUGH OUT
150-153	CAULKING	4 WINDOWS		BRIDGE TO BLDG. #11
154-156	WGC	4 WINDOWS	↓	" "
470-472	CAULKING	10 WINDOWS	DAMAGED	EXTERIOR @ CMU BLOCKED WINDOWS
473-475	FLASHING	700 FT²		ROOF - EDGES + PENETRATIONS
476-477	FIELD (BUILT-UP)	16000/ALL		ROOF - FIELD (UNDER EDPM)
ASSUMED	ANY ROOFING/FLASHINGS @	BRIDGE		FROM MILL 12 TO MILL 11 (NO ACCESS) (EPDM IS TOP)

PATTERN 126-128 / 129-131

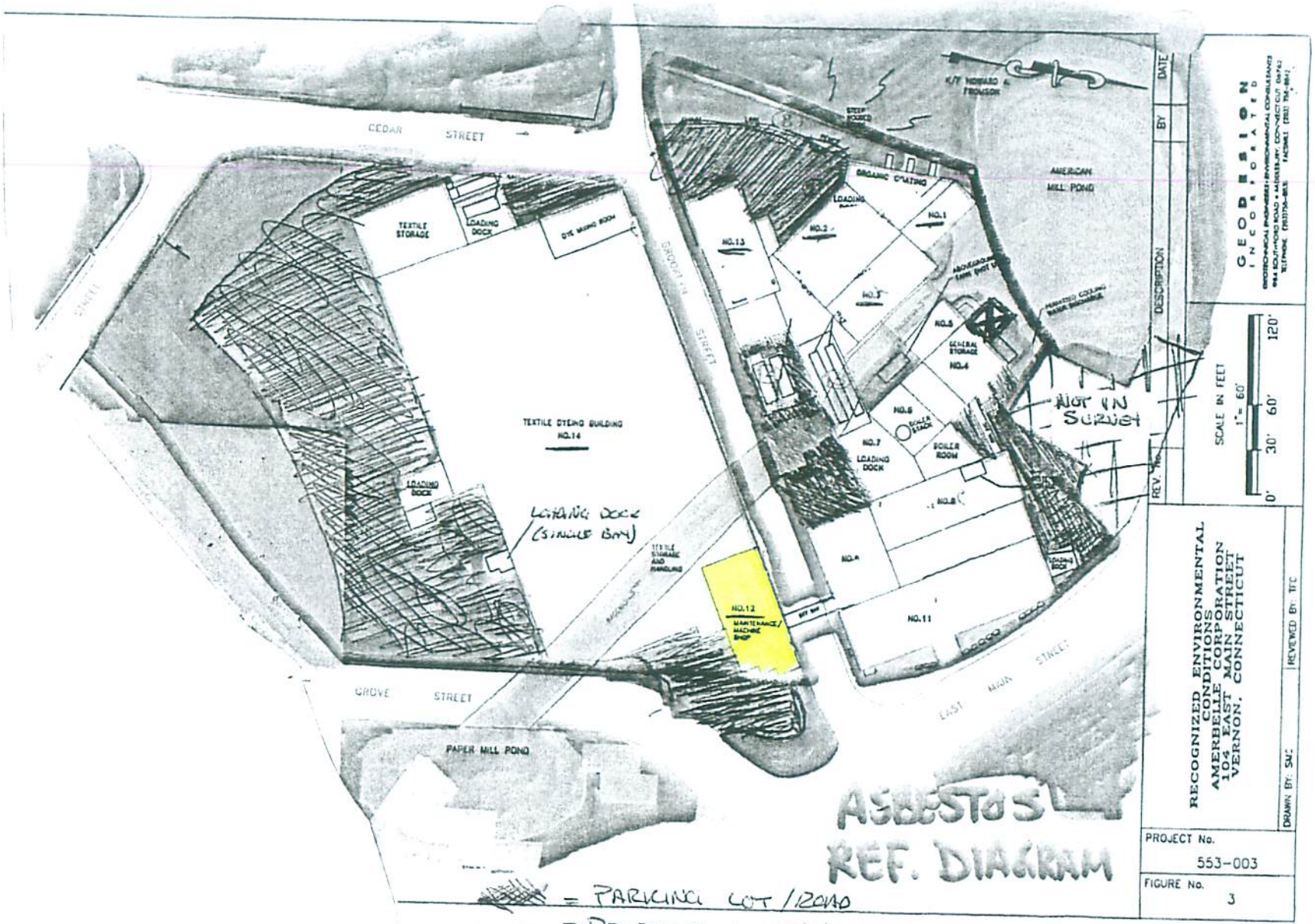
4-6-15

COMMENTS: WGC = WINDOW GLAZING COMPOUND

(*)

B. WOODARD

Inspector: C. MULLEN



= PARKING LOT / ROAD

= PROPERTY LINE(S)

= RIVER

= GRASS

= BLDG. # IDENTIFICATION

= NOT PART OF SURVEY

= BLDG. BEHIND MILL #4, NO ACCESS. ROOF HAS COLLAPSED DOOR IS BLOCKED @ MILL #4.

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00073

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/03/2015

Project/Test Address: Mill #12; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00073-001	TCLP-Pb	Bldg. Debris	100	1.0	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

1 Pb TCLP

15-04-00073

Due Date:
04/06/2015
(Monday)
AE

EHS Laboratories

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL # 12 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLIN Certification Number: N/A Purchase Order Number: GZIA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
		2015	Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM- 10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	03-31	X														Composite
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLIN Signature: C. MULLIN Date/Time: 03-31-15 / 1600

JSTONE JSTONE Date/Time: 4/1/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants
1204 North Road (Rt. 117)
Groton, CT 06340

Date 03 / 26 / 15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

@ MILL 14 + 12 HAVE FROZEN FLOORS, TROUGHES, POOLS & PIPE LINE @ FLOOR. PACM IS SEEN BUT NOT TESTED. DEBRIS IS ASSOCIATED TO MATERIALS SAMPLED (PIPE T.S.I., SHEETROCK ...)

EXHIBIT 6 PAGE 1 OF 3

HYGIENIST'S NAME B. WOODARD C. MILLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/31/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

MILLS 5, 8 + SMALL BLDG (BEHIND MILL 4) - SAME NOTE AS 3/26

⊛ BLUE STEEL BLDG. HAS 2 LARGE TANKS WITH NO INTERIOR PACM OR PAINTED SURFACES. SUSPECT RTU/HVAC HAS 4 PENETRATIONS OF SUSPECT ACM.

ENCLOSURE 6 PAGE 2 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

* ON-SITE TO CONDUCT AN ASBESTOS + TCLP-Pb SAMPLE COLLECTION.

HYGIENIST'S NAME B. WOODRUFF C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 3 OF 3

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com maqc2@aol.com 800 247-7746

April 23, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/27/15 & 4/3 & 6/15)**
104 East Main Street; Vernon, CT
Location: Mill #13

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 27th, April 3rd and 6th, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
157-159	Window Glazing Compound/Interior @ exterior wall & 1 window at small room	13 windows
163-165	Wrap (silver)/Cover over fiberglass blankets on wall	>1,000 sq. ft./All
438	Caulking/Parking Lot –Loading Dock	Garage door
495	Transite Panel/Penthouse with Green Door –interior siding @ silver roof	1,500 sq. ft./All
499	Built-up Roof Field (under EPDM)/Smaller @ EPDM Side –Box Top Roof (top)	200 sq. ft.
502	Flashing Painted Silver/Pitched Silver Roof	All
503	Flashing Repairs/On Top –Silver Roof	All

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Reference Diagram
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00102

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/02/2015
Reported Date: 04/03/2015

Project/Test Address: Mill #13; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00102-001	157		Tan Brittle; Homogeneous	2% Chrysotile	1% Cellulose 97% Non-Fibrous
			Total Asbestos:	**2%**	
15-04-00102-002	158			Did Not Analyze (Positive Stop)	
15-04-00102-003	159			Did Not Analyze (Positive Stop)	
15-04-00102-004	160		Orange-Brown Pliable; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00102-005	161		Orange-Brown Pliable; Homogeneous	NAD	100% Non-Fibrous
15-04-00102-006	162		Orange-Brown Pliable; Homogeneous	NAD	100% Non-Fibrous

ENCLOSURE 1 PAGE 1 OF 8

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00102
Project/Test Address: Mill #13; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00102-007	163		Off-White Fibrous; Yellow Adhesive; Silver Foil; Inhomogeneous	50% Chrysotile	10% Cellulose 40% Non-Fibrous
			Total Asbestos:	**50%**	
Chrysotile present in off-white fibrous/yellow adhesive materials.					
15-04-00102-008	164			Did Not Analyze (Positive Stop)	
15-04-00102-009	165			Did Not Analyze (Positive Stop)	
15-04-00102-010	166		Silver Paint-Like; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00102-011	167		Silver Paint-Like; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00102-012	168		Silver Paint-Like; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00102

Project/Test Address: Mill #13; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 77-M22010-4

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Michelle Swift

Reviewed By Authorized Signatory:

Julie Dickerson
Laboratory Administrator

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01049

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/10/2015
Reported Date: 04/13/2015

Project/Test Address: Mill #13; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01049-001	426		Black Tar-Like; Fibrous; Silver Paint-Like; Inhomogeneous	NAD	25% Cellulose 5% Synthetic 70% Non-Fibrous
15-04-01049-002	427		Black Tar-Like; Fibrous; Silver Paint-Like; Inhomogeneous	NAD	25% Cellulose 5% Synthetic 70% Non-Fibrous
15-04-01049-003	428		Black Tar-Like; Fibrous; Silver Paint-Like; Inhomogeneous	NAD	25% Cellulose 5% Synthetic 70% Non-Fibrous
15-04-01049-004	429		Black Rubbery; Silver Paint-Like; Inhomogeneous	NAD	8% Cellulose 92% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01049
Project/Test Address: Mill #13; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01049-005	430		Black Rubbery; Silver Paint-Like; Inhomogeneous	NAD	8% Cellulose 92% Non-Fibrous
15-04-01049-006	431		Black Rubbery; Silver Paint-Like; Inhomogeneous	NAD	8% Cellulose 92% Non-Fibrous
15-04-01049-007	432		Black Tar-Like; Silver Paint-Like; Inhomogeneous	NAD	18% Cellulose 2% Synthetic 80% Non-Fibrous
15-04-01049-008	433		Black Tar-Like; Silver Paint-Like; Inhomogeneous	NAD	18% Cellulose 2% Synthetic 80% Non-Fibrous
15-04-01049-009	434		Black Tar-Like; Silver Paint-Like; Inhomogeneous	NAD	18% Cellulose 2% Synthetic 80% Non-Fibrous
15-04-01049-010	435		Silver Paint-Like; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-01049-011	436		Silver Paint-Like; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01049
Project/Test Address: Mill #13; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01049-012	437		Silver Paint-Like; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-01049-013	438		Beige Granular; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	**2%**	
15-04-01049-014	495		Gray Cementitious; Homogeneous	18% Chrysotile	2% Cellulose 80% Non-Fibrous
			Total Asbestos:	**18%**	
15-04-01049-015	496		Black Tar-Like; Black/Brown Fibrous; Homogeneous	NAD	30% Cellulose 5% Fibrous Glass 10% Synthetic 55% Non-Fibrous
15-04-01049-016	497		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	18% Cellulose 2% Synthetic 80% Non-Fibrous
15-04-01049-017	498		Black Tar-Like; Fibrous; Homogeneous	NAD	2% Cellulose 28% Synthetic 70% Non-Fibrous
15-04-01049-018	499		Black Tar-Like; Fibrous; Homogeneous	8% Chrysotile	10% Cellulose 2% Synthetic 80% Non-Fibrous
			Total Asbestos:	**8%**	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01049

Project/Test Address: Mill #13; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01049-019	500		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	40% Cellulose 10% Synthetic 50% Non-Fibrous
15-04-01049-020	501		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	50% Cellulose 50% Non-Fibrous
15-04-01049-021	502		Black Tar-Like; Fibrous; Silver Paint-Like; Inhomogeneous	10% Chrysotile	8% Cellulose 2% Synthetic 80% Non-Fibrous
			Total Asbestos:	**10%**	
Chrysotile present throughout.					
15-04-01049-022	503		Black Tar-Like; Fibrous; Silver Paint-Like; Inhomogeneous	10% Chrysotile	8% Cellulose 2% Synthetic 80% Non-Fibrous
			Total Asbestos:	**10%**	
Chrysotile present throughout.					

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01049
Project/Test Address: Mill #13; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 74-M22011-2
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Timothy Harris

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

12 PLM

Asbestos Chain-of-Custody

15-04-00102

Due Date:
04/06/2015
(Monday)
AE

MS

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill # 13 City/State(required) Veenon, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	157-159	3/27/15	X	Positive Stop	Glazing Compound	See Roster	Bulks
2	160-162	↓	↓		Adhesive	↓	↓
3	163-165	↓	↓		Wrap	↓	↓
4	166-168	↓	↓		Silver paint	↓	↓
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: CMuller Signature: CM date: 3/31/15

Received by: TMoran Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 2

EHS Laboratories

22 PLM

Asbestos Chain-of-Custody

15-04-01049

Due Date:
04/13/2015
(Monday)
AE

T

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: MILL # 13 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

ENCLOSURE 2 PAGE 2 OF 2

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	426-428	4/13	X	Positive Stop	Black Caulking	See Roster	
2	429-431				Caulking		
3	432-434				Flashing		
4	435-437				Silver Paint		
5	438				Caulking		
6	495	4/6	X	Positive Stop	Transite		
7	496				Roofing		
8	497						
9	498						
10	499						
11	500						
12	501						
13	502						
14	503						
15							

Released by: C Mullen Signature: date: 4/9/15

Received by: Thuhan Signature: date: 4/8/15

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 13
VERNON, CT
FORMER "AMERBELLE"

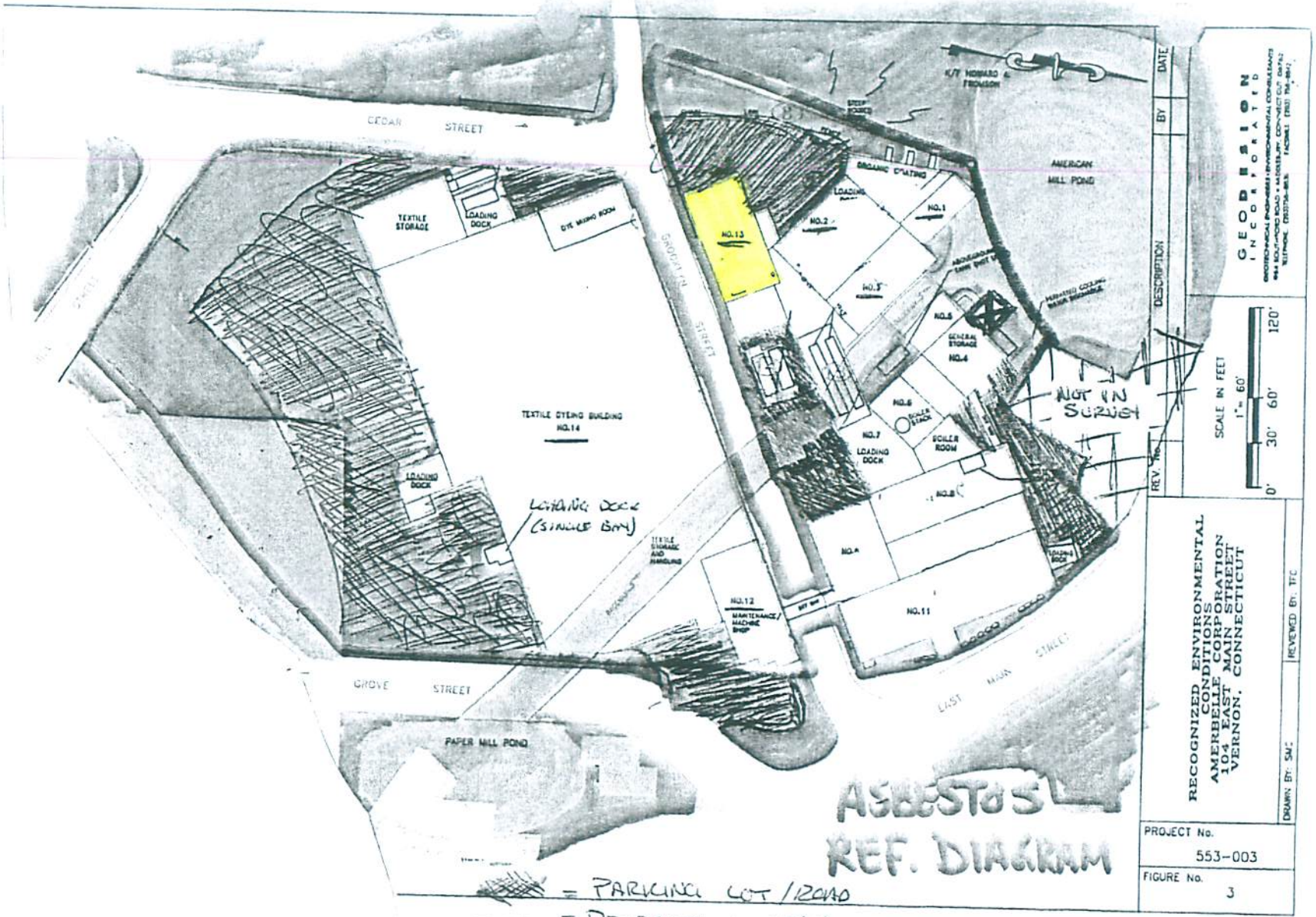
DATE: 03/27/15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
157-159	WGC	13 WINDOWS	DAMAGED	(4 WINDOW IS AT SMALL ROOM) INTERIOR @ EXTERIOR WALL
160-162	ADHESIVE	>1000 FT²/ALL	↓	FIBERGLASS BLANKETS ON WALLS
163-165	WRAP (SILVER)	"	↓	COVER OVER FIBERGLASS BLANKETS ON WALL
166-168	SILVER PAINT	20 LNFT	↓	METAL STACK
4-3-15 426-428	CORIGATED FILLER BLACK, ~~~ SHAPE	ALL	DAMAGED	WINDOWS, EDGES EXTERIOR + ROOF SEAMS
429-431	CAULKING	ALL	↓	EXTERIOR - SCREW HEADS
432-434	FLASHING / MASTIC	60 LNFT	↓	SIDEWALK TO BLDG.
435-437	SILVER PAINT	ALL	↓	CORIGATED METAL (SIDING + ROOF)
438	CAULKING	GARAGE DOOR	↓	@ PARKING LOT / LOADING DOCK
4-6-15 495	TRANSITE PANEL	1500 / ALL	DAMAGED	PENTHOUSE W/ GREEN DOOR - INTERIOR SIDING @ SILVER ROOF
496	BUILT-UP ROOF FIELD	1800 / ALL		(NO EPDM) FLAT ROOF, FIELD (TOP)
497	" "	"		" (BOTTOM)
498	BUILT-UP ROOF FIELD (UNDER EPDM)	200 FT²		SMALLER @ EPDM SIDE BOX TOP ROOF (TOP)
499	" "	"		" " (BOTTOM)
500	" "	2000 FT²		FLAT ROOF FIELD (TOP)
501	" "	"		" " (BOTTOM)
502	FLASHING (PAINTED SILVER)			PITCHED SILVER ROOF
503	" (REPAIRS)			ONTOP SILVER ROOF

COMMENTS: WGC = WINDOW GLAZING COMPOUND

Inspector: B. WOODARD
C. MULLER



= PARKING LOT / ROAD

= PROPERTY LINE(S)

= RIVER

= GRASS

= BLDG. # IDENTIFICATION

= NOT PART OF SURVEY

= BLDG. BEHIND MILL #4, NO ACCESS. ROOF HAS COLLAPSED DOOR IS BLOCKED @ MILL #4.

ENCLOSURE 4 PAGE 1 OF 1

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00592

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/06/2015
Analyzed Date: 04/09/2015
Reported Date: 04/09/2015

Project/Test Address: Mill #13; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00592-001	TCLP-Pb	Bldg. Debris	100	0.69	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

15-04-00592

Due Date:
04/09/2015
(Thursday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL # 13 (City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLIN Certification Number: N/A Purchase Order Number: GZA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
		2015	Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirible Dust	TSP Gravimetric	TSP Pb	PM-10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	4-3	X														COMPOSITE
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLIN Signature: Date/Time: 04-7-15 / 1600

Date/Time: Thursday 4/16/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/27/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

⊛ MILLS 13, 2, 1, 3 - SAME NOTE AS 3/26

HYGIENIST'S NAME N. CARAFENO C. MULLIGR

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/03/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS + TCLP-PB SAMPLE COLLECTION.

⊛ TCLP-PB SAMPLES ARE LIMITED + DIRECTED COMPOSITES, NO MATERIALS THAT ARE TO BE RE-USED WERE COLLECTED (I.E. METAL, CLEAN BRICK + CONCRETE...)

ENCLOSURE, PAGE 2 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

HYGIENIST'S NAME B. WOODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ENCLOSURE 6 PAGE 3 OF 3

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

April 20, 2015

Christopher J. Frey
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive - Suite 402
Glastonbury, CT 06033-4337

Re: **Pre-Demolition Asbestos Survey and TCLP Analysis (3/26, 31 & 4/6/15)**
104 East Main Street; Vernon, CT
Location: Mill #14

Dear Mr. Frey:

As requested, Mystic Air Quality Consultants, Inc. conducted a pre-demolition survey of accessible materials at the location noted above on March 26th & 31st, 2015. This survey was conducted by Christopher Muller and Brian Woodard, a Connecticut State licensed asbestos inspectors (licenses #000215 and #000741), to determine the presence of asbestos-containing materials. The samples were analyzed by polarized light microscopy at Environmental Hazards Services (NVLAP # 101882-0) in Virginia.

In addition to the asbestos survey, a composite or TCLP sample was collected and analyzed for lead to determine if the demolition materials would have to be considered lead waste. The sample analysis was also performed by Environmental Hazards Services.

Summary of the findings

Upon testing by polarized light microscopy, the following materials were found to be asbestos containing:

Sample #s	Material/Location	Estimated Affected Area
1-3	Small Diameter Pipe Fitting T.S.I./Throughout	>100 sq. ft./All
4-6	Small Diameter Pipe Run T.S.I. (aircell)/Throughout	>100 sq. ft./All
7-9	Small Diameter Pipe Run T.S.I. (block)/Throughout	>100 sq. ft./All
22-24	Large Diameter Pipe Run T.S.I./Throughout	>100 sq. ft./All
31-33	Ceiling Tile Glue Daubs/Office #3	100 sq. ft.
40-42	Linoleum Flooring & Mastic/Dye mixing locker room	300 sq. ft.
55	Window Glazing Compound/Loading Dock (top of wall)	2 small windows
62-64	White Window Caulking/Upper Level @ Exterior Walls	32 large windows
71-73	Orange Floor Tile & Mastic/Office #5	225 sq. ft.
83	Built-up Flooring & Mastic/Upper Level –Women's	120 sq. ft.
84-86	Large Diameter Pipe Fitting T.S.I./Throughout	>100 sq. ft./All

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

Sample #s	Material/Location	Estimated Affected Area
105-107	Caulking/Exterior Doors	Metal Doors
108-110	Caulking/Exterior Windows	All
111	Window Glazing/Exterior Garage –side loading door	All
112-114	Caulking/Exterior Vents	Vents
115-117	Flashing/Blue Vents @ left side of building	Vents
410-412	Black Blocking/"Bulldog" Fuse/Electric Insulator	Floor Debris
446	Flashing/ Flat Roof @ rear of loading dock (edges & penetrations)	100 sq. ft.
447	Flashing/Double Door Loading Dock (edges & penetrations)	60 sq. ft.
452-454	Flashing/Under EPDM Main Roof & Stairwell Roof	1,200 sq. ft.
464-466	Black Flashing & Wrap/Duct Work @ Roof	400 linear ft.

Special Considerations

Any of the non-asbestos roofing materials with flashing attached will need to be treated as asbestos-contaminated and be cut out with it when it is abated.

Inspector Noted: The floors, trenches, pools and floor pipe lines were all frozen. Presumed Asbestos Containing Materials are seen but not tested. The Debris is associated to the materials sampled.

Non-asbestos containing materials

The roster of suspect materials (Enclosure 3), lists the materials tested. Those that are not already referred to as asbestos containing or assumed asbestos, can be categorized as non-asbestos containing materials.

Implications of the findings

As required by state and federal regulations prior to demolition, all the asbestos-containing materials will need to be removed by a licensed asbestos abatement contractor employing trained and certified personnel who follow all pertinent asbestos abatement regulations.

Limitations of the survey

The survey included destructive testing of floors, wall cavities, and exterior brick and foundation mastics, above ceilings, and roofing core samples. There may be other materials that become evident during your demolition activity. Should the requisite EPA/OSHA competent person working for the contractor discover such materials they will need to be tested for asbestos content so determinations of their abatement and disposal (if required) can be made.

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, Connecticut 06340

www.mysticair.com *maqc2@aol.com* *800 247-7746*

TCLP Analysis results

The results of the TCLP analysis indicate that the building materials do not need to be disposed of as lead waste subsequent to demolition. The result of the sample was below the EPA's TCLP standard of 5 mg/l for lead.

Please do not hesitate to contact us with questions relating to the sample results and any subsequent work that may be performed for your company.

Sincerely,

Christopher J. Eident CIH, CSP, RS
CEO

Enclosure 1: Asbestos Lab Results
Enclosure 2: Chain of Custody
Enclosure 3: Roster of Suspect Materials
Enclosure 4: Pictures & Drawings of Property
Enclosure 5: TCLP Analysis and Chain of Custody
Enclosure 6: Daily Job Logs

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00046

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/01/2015
Reported Date: 04/01/2015

Project/Test Address: Mill #14; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00046-001	1		Light Gray Powder; Fibrous; Homogeneous	60% Chrysotile	40% Non-Fibrous
			Total Asbestos:	**60%**	
15-04-00046-002	2			Did Not Analyze (Positive Stop)	
15-04-00046-003	3			Did Not Analyze (Positive Stop)	
15-04-00046-004	4		Beige Fibrous; Homogeneous	65% Chrysotile	30% Cellulose 5% Non-Fibrous
			Total Asbestos:	**65%**	
15-04-00046-005	5			Did Not Analyze (Positive Stop)	
15-04-00046-006	6			Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00046
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00046-007	7		Off-White Powder; Fibrous; Homogeneous	35% Chrysotile	1% Cellulose 2% Fibrous Glass 62% Non-Fibrous
			Total Asbestos:	**35%**	
15-04-00046-008	8			Did Not Analyze (Positive Stop)	
15-04-00046-009	9			Did Not Analyze (Positive Stop)	
15-04-00046-010	22		Off-White Powder; Fibrous; Homogeneous	35% Chrysotile	65% Non-Fibrous
			Total Asbestos:	**35%**	
15-04-00046-011	23			Did Not Analyze (Positive Stop)	
15-04-00046-012	24			Did Not Analyze (Positive Stop)	
15-04-00046-013	25		Light Gray Powder; Tan Fibrous; White Paint-Like; Inhomogeneous	NAD	14% Cellulose 4% Fibrous Glass 82% Non-Fibrous
15-04-00046-014	26		Light Gray Powder; Tan Fibrous; White Paint-Like; Inhomogeneous	NAD	14% Cellulose 4% Fibrous Glass 82% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00046
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00046-015	27		Light Gray Powder; Tan Fibrous; White Paint-Like; Inhomogeneous	NAD	14% Cellulose 4% Fibrous Glass 82% Non-Fibrous
15-04-00046-016	84		White Powder; Fibrous; Homogeneous	25% Chrysotile 15% Amosite **Total Asbestos: 40%**	60% Non-Fibrous
15-04-00046-017	85			Did Not Analyze (Positive Stop)	
15-04-00046-018	86			Did Not Analyze (Positive Stop)	
15-04-00046-019	90		White Granular; Light Gray Powder; White/Tan Fibrous; Off-White Paint-Like; Inhomogeneous	NAD	17% Cellulose 4% Fibrous Glass 79% Non-Fibrous
15-04-00046-020	91		White Granular; Light Gray Powder; White/Tan Fibrous; Off-White Paint-Like; Inhomogeneous	NAD	17% Cellulose 4% Fibrous Glass 79% Non-Fibrous
15-04-00046-021	92		White Granular; Pink Powder; White/Tan Fibrous; Off-White Paint-Like; Inhomogeneous	NAD	17% Cellulose 4% Fibrous Glass 79% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00046
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00046-022	410		Black Cementitious; Homogeneous	18% Chrysotile	82% Non-Fibrous
			Total Asbestos:	**18%**	
15-04-00046-023	411			Did Not Analyze (Positive Stop)	
15-04-00046-024	412			Did Not Analyze (Positive Stop)	

QC Sample: 73-M12009-4
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Vickie Holmes

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-00114

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/04/2015
Reported Date: 04/06/2015

Project/Test Address: Mill #14; Vernon, CT

Client Number:
07-2564

Laboratory Results

Fax Number:
860-449-8860

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-001A	10	Flooring	Pale Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-001B	10	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-002A	11	Flooring	Pale Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-002B	11	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 1% Synthetic 96% Non-Fibrous
15-04-00114-003A	12	Flooring	Pale Gray Granular; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-003B	12	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-004	13		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	55% Cellulose 20% Fibrous Glass 25% Non-Fibrous
15-04-00114-005	14		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	55% Cellulose 20% Fibrous Glass 25% Non-Fibrous
15-04-00114-006	15		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	55% Cellulose 20% Fibrous Glass 25% Non-Fibrous
15-04-00114-007	16		Off-White Brittle; Tan Fibrous; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous
15-04-00114-008	17		Off-White/White Brittle; Tan Fibrous; Dark Gray Pliable to Brittle; Inhomogeneous	NAD	10% Cellulose 8% Fibrous Glass 82% Non-Fibrous
15-04-00114-009	18		Off-White Brittle; Tan Fibrous; Inhomogeneous	NAD	20% Cellulose 80% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-010	19		Pale Yellow Adhesive; Homogeneous	NAD	8% Cellulose 92% Non-Fibrous
15-04-00114-011	20		Pale Yellow Adhesive; Homogeneous	NAD	10% Cellulose 90% Non-Fibrous
15-04-00114-012	21		Pale Yellow Adhesive; Homogeneous	NAD	7% Cellulose 1% Fibrous Glass 92% Non-Fibrous
15-04-00114-013	28		Tan Fibrous; White Brittle; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous
15-04-00114-014	29		Tan Fibrous; White Brittle; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous
15-04-00114-015	30		Tan Fibrous; White Brittle; Inhomogeneous	NAD	95% Cellulose 5% Non-Fibrous
15-04-00114-016	31		Dark Brown Adhesive; Homogeneous	3% Chrysotile	3% Cellulose 94% Non-Fibrous
			Total Asbestos:	**3%**	
15-04-00114-017	32			Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-018	33			Did Not Analyze (Positive Stop)	
15-04-00114-019A	34	Flooring	Gray/Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-019B	34	Mastic	Yellow to Dark Amber Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-020A	35	Flooring	Gray/Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-020B	35	Mastic	Yellow to Dark Amber Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-021A	36	Flooring	Gray/Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-021B	36	Mastic	Yellow to Dark Amber Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-022A	37	Cove Base	Gray Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114

Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-022B	37	Mastic	Pale Beige Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-023A	38	Cove Base	Gray Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-023B	38	Mastic	Pale Beige Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-024A	39	Cove Base	Gray Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-024B	39	Mastic	Pale Beige Adhesive; Homogeneous	NAD	4% Cellulose 1% Hair 95% Non-Fibrous
15-04-00114-025A	40	Flooring	Rust Orange/Tan Vinyl-Like; Off-White Fibrous; Inhomogeneous	18% Chrysotile	5% Cellulose 77% Non-Fibrous
			Total Asbestos:	**18%**	
Chrysotile present in fibrous backing layer.					
15-04-00114-025B	40	Mastic	Pale Brown-Gray Adhesive; Homogeneous	2% Chrysotile	5% Cellulose 93% Non-Fibrous
			Total Asbestos:	**2%**	
Chrysotile may be present as a contaminant from adjacent fibrous backing.					
15-04-00114-026A	41	Flooring		Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-026B	41	Mastic		Did Not Analyze (Positive Stop)	
15-04-00114-027A	42	Flooring		Did Not Analyze (Positive Stop)	
15-04-00114-027B	42	Mastic		Did Not Analyze (Positive Stop)	
15-04-00114-028	43		Silver Brittle; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00114-029	44		Silver Brittle; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00114-030	45		Silver Brittle; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-031	46		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	55% Cellulose 20% Fibrous Glass 25% Non-Fibrous
15-04-00114-032	47		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	55% Cellulose 20% Fibrous Glass 25% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-033	48		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	55% Cellulose 20% Fibrous Glass 25% Non-Fibrous
15-04-00114-034A	49	Flooring	Blue-Gray/Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-034B	49	Mastic	Yellow Adhesive; Homogeneous	NAD	8% Cellulose 92% Non-Fibrous
15-04-00114-035A	50	Flooring	Blue-Gray/Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-035B	50	Mastic	Yellow Adhesive; Homogeneous	NAD	10% Cellulose 90% Non-Fibrous
15-04-00114-036A	51	Flooring	Blue-Gray/Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-036B	51	Mastic	Yellow Adhesive; Homogeneous	NAD	8% Cellulose 92% Non-Fibrous
15-04-00114-037	52		Tan/Brown Fibrous; Black Pliable to Brittle; Inhomogeneous	NAD	60% Cellulose 40% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-038	53		Tan/Brown Fibrous; Black Pliable to Brittle; Inhomogeneous	NAD	60% Cellulose 40% Non-Fibrous
15-04-00114-039	54		Tan/Brown Fibrous; Black Pliable to Brittle; Inhomogeneous	NAD	60% Cellulose 40% Non-Fibrous
15-04-00114-040	55		Off-White/Beige Brittle; Inhomogeneous	2% Chrysotile	1% Cellulose 1% Wollastonite 96% Non-Fibrous
			Total Asbestos:	**2%**	
Chrysotile present in beige layer.					
15-04-00114-041A	56	Flooring	Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-041B	56	Mastic	Black Adhesive; Homogeneous	NAD	7% Cellulose 1% Fibrous Glass 92% Non-Fibrous
15-04-00114-042A	57	Flooring	Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-042B	57	Mastic	Black Adhesive; Homogeneous	NAD	10% Cellulose 90% Non-Fibrous
15-04-00114-043A	58	Flooring	Off-White Granular; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-043B	58	Mastic	Black Adhesive; Homogeneous	NAD	10% Cellulose 90% Non-Fibrous
15-04-00114-044	59		Gray to Tan Brittle; Homogeneous	NAD	1% Cellulose 1% Talc 98% Non-Fibrous
15-04-00114-045	60		Gray to Tan Brittle; Homogeneous	NAD	1% Wollastonite 1% Talc 98% Non-Fibrous
15-04-00114-046	61		Gray to Tan Pliable to Brittle; Homogeneous	NAD	1% Wollastonite 2% Talc 97% Non-Fibrous
15-04-00114-047	62		Off-White Pliable; Homogeneous	7% Chrysotile	93% Non-Fibrous
			Total Asbestos:	**7%**	
15-04-00114-048	63			Did Not Analyze (Positive Stop)	
15-04-00114-049	64			Did Not Analyze (Positive Stop)	
15-04-00114-050	65		Pale Gray Pliable to Brittle; Silver Brittle; Inhomogeneous	NAD	1% Cellulose 1% Wollastonite 3% Talc 95% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-051	66		Pale Gray Pliable to Brittle; Silver Brittle; Inhomogeneous	NAD	1% Wollastonite 4% Talc 95% Non-Fibrous
15-04-00114-052	67		Pale Gray Pliable to Brittle; Silver Brittle; Inhomogeneous	NAD	1% Wollastonite 3% Talc 96% Non-Fibrous
15-04-00114-053A	68	Cove Base	Brown Vinyl-Like; Multi-Colored Pliable to Brittle; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00114-053B	68	Mastic	Yellow/Brown Adhesive; Inhomogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-054A	69	Cove Base	Brown Vinyl-Like; Multi-Colored Pliable to Brittle; Inhomogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00114-054B	69	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-055A	70	Cove Base	Brown Vinyl-Like; Multi-Colored Pliable to Brittle; Inhomogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-055B	70	Mastic	Yellow/Brown Adhesive; Inhomogeneous	NAD	3% Cellulose 1% Hair 96% Non-Fibrous
15-04-00114-056A	71	Flooring	Pink-Tan Granular; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00114-056B	71	Other *	Black Adhesive; Tan Fibrous; Inhomogeneous	3% Chrysotile	25% Cellulose 2% Synthetic 70% Non-Fibrous
			Total Asbestos:	**3%**	
* Mastic/Embedded Fibrous Substrate; chrysotile present in black mastic layer.					
15-04-00114-057A	72	Flooring	Pink-Tan Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-057B	72	Other *		Did Not Analyze (Positive Stop)	
* Mastic/Embedded Fibrous Substrate					
15-04-00114-058A	73	Flooring	Pink-Tan Granular; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-058B	73	Other *		Did Not Analyze (Positive Stop)	
* Mastic/Embedded Fibrous Substrate					
15-04-00114-059A	74	Cove Base	Pale Beige Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-059B	74	Mastic	Yellow/Transluscent to Pale Yellow Adhesive; Inhomogeneous	NAD	6% Cellulose 2% Synthetic 2% Hair 90% Non-Fibrous
15-04-00114-060A	75	Cove Base	Pale Beige Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-060B	75	Mastic	Yellow/Transluscent to Pale Yellow Adhesive; Inhomogeneous	NAD	5% Cellulose 2% Synthetic 1% Hair 92% Non-Fibrous
15-04-00114-061A	76	Cove Base	Pale Beige Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-061B	76	Mastic	Yellow/Transluscent to Pale Yellow Adhesive; Inhomogeneous	NAD	7% Cellulose 1% Synthetic 2% Hair 90% Non-Fibrous
15-04-00114-062A	77	Flooring	Off-White/Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-062B	77	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-063A	78	Flooring	Off-White/Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-063B	78	Mastic	Yellow Adhesive; Homogeneous	NAD	5% Cellulose 1% Synthetic 94% Non-Fibrous
15-04-00114-064A	79	Flooring	Off-White/Gray Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-064B	79	Mastic	Yellow Adhesive; Homogeneous	NAD	8% Cellulose 92% Non-Fibrous
15-04-00114-065A	80	Grout	Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-065B	80	Mortar	Tan-Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-066A	81	Grout	Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-066B	81	Mortar	Tan-Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-067A	82	Grout	Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-067B	82	Mortar	Tan-Gray Cementitious; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-068A	83	Other *	Beige/Tan/White Vinyl-Like; Pale Tan Fibrous; Inhomogeneous	NAD	15% Cellulose 7% Fibrous Glass 3% Synthetic 75% Non-Fibrous
* Top Layer Flooring					
15-04-00114-068B	83	Other *	Yellow to Brown Adhesive; Homogeneous	NAD	5% Cellulose 2% Fibrous Glass 1% Synthetic 92% Non-Fibrous
* Mastic Beneath Top Layer Flooring					
15-04-00114-068C	83	Other *	Beige/Dark Gray/White Vinyl-Like; Off-White Fibrous; Inhomogeneous	20% Chrysotile	5% Cellulose 75% Non-Fibrous
				Total Asbestos: 20%	
* Bottom Layer Flooring; chrysotile present in fibrous backing layer.					
15-04-00114-068D	83	Other *	Yellow Adhesive; Homogeneous	2% Chrysotile	4% Cellulose 1% Hair 93% Non-Fibrous
				Total Asbestos: 2%	
* Mastic Beneath Bottom Layer Flooring; chrysotile may be present as a contaminant from adjacent fibrous backing.					
15-04-00114-068E	83	Other *	Black Adhesive; Tan Fibrous; Inhomogeneous	2% Chrysotile	70% Cellulose 28% Non-Fibrous
				Total Asbestos: 2%	
* Residual Black Mastic/Embedded Fibrous Substrate Beneath Flooring Layers; chrysotile present in black mastic.					

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-069	87		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	45% Cellulose 30% Fibrous Glass 25% Non-Fibrous
15-04-00114-070	88		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	45% Cellulose 30% Fibrous Glass 25% Non-Fibrous
15-04-00114-071	89		Pale Gray to Tan Fibrous; White Brittle; Inhomogeneous	NAD	45% Cellulose 30% Fibrous Glass 25% Non-Fibrous
15-04-00114-072A	93	Cove Base	Black/Dark Gray Vinyl-Like; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00114-072B	93	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-073A	94	Cove Base	Black/Dark Gray Vinyl-Like; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00114-073B	94	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-074A	95	Cove Base	Black/Dark Gray Vinyl-Like; Inhomogeneous	NAD	100% Non-Fibrous
15-04-00114-074B	95	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 1% Fibrous Glass 97% Non-Fibrous
15-04-00114-075A	96	Cove Base	Brown Vinyl-Like; Homogeneous	NAD	1% Cellulose 99% Non-Fibrous
15-04-00114-075B	96	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-076A	97	Cove Base	Brown Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-076B	97	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 1% Hair 96% Non-Fibrous
15-04-00114-077A	98	Cove Base	Brown Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-077B	98	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-078A	99	Cove Base	Blue Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-078B	99	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 1% Fibrous Glass 96% Non-Fibrous
15-04-00114-079A	100	Cove Base	Blue Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-079B	100	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-080A	101	Cove Base	Blue Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-080B	101	Mastic	Yellow Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous
15-04-00114-081	102		Yellow Adhesive; Homogeneous	NAD	3% Cellulose 3% Synthetic 1% Hair 93% Non-Fibrous
15-04-00114-082	103		Yellow Adhesive; Homogeneous	NAD	4% Cellulose 3% Synthetic 93% Non-Fibrous

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-083	104		Yellow Adhesive; Homogeneous	NAD	3% Cellulose 1% Fibrous Glass 3% Synthetic 93% Non-Fibrous
15-04-00114-084	105		White Pliable; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-085	106		Beige Pliable to Brittle; Homogeneous	3% Chrysotile	97% Non-Fibrous
			Total Asbestos:	**3%**	
15-04-00114-086	107			Did Not Analyze (Positive Stop)	
15-04-00114-087	108		Tan-Gray Pliable to Brittle; Homogeneous	4% Chrysotile	96% Non-Fibrous
			Total Asbestos:	**4%**	
15-04-00114-088	109			Did Not Analyze (Positive Stop)	
15-04-00114-089	110			Did Not Analyze (Positive Stop)	
15-04-00114-090	111		Off-White to Pale Beige Brittle; Homogeneous	2% Chrysotile	2% Cellulose 96% Non-Fibrous
			Total Asbestos:	**2%**	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-091	112		Pale Gray Brittle to Coarse Powder; Homogeneous	2% Chrysotile	1% Wollastonite 1% Talc 96% Non-Fibrous
				Total Asbestos: 2%	
15-04-00114-092	113			Did Not Analyze (Positive Stop)	
15-04-00114-093	114			Did Not Analyze (Positive Stop)	
15-04-00114-094	115		Black to Gray Brittle; Homogeneous	15% Chrysotile	85% Non-Fibrous
				Total Asbestos: 15%	
15-04-00114-095	116			Did Not Analyze (Positive Stop)	
15-04-00114-096	117			Did Not Analyze (Positive Stop)	
15-04-00114-097A	413	Flooring	Dark Gray to Black Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-097B	413	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-098A	414	Flooring	Dark Gray to Black Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00114
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00114-098B	414	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-00114-099A	415	Flooring	Dark Gray to Black Vinyl-Like; Homogeneous	NAD	100% Non-Fibrous
15-04-00114-099B	415	Mastic	Yellow Adhesive; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous

QC Sample: 79-M22012-1
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Mark Case

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories
Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 15-04-01036

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/08/2015
Analyzed Date: 04/09/2015
Reported Date: 04/10/2015

Project/Test Address: Mill #14; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01036-001	443		Black Tar-Like; Fibrous; Black Aggregate; Inhomogeneous	NAD	40% Cellulose 10% Synthetic 50% Non-Fibrous
15-04-01036-002	444		Black Tar-Like; Fibrous; Homogeneous	NAD	80% Cellulose 10% Synthetic 10% Non-Fibrous
15-04-01036-003	445		Black Tar-Like; Fibrous; Homogeneous	NAD	40% Cellulose 10% Synthetic 50% Non-Fibrous
15-04-01036-004	446		Black Tar-Like; Fibrous; Homogeneous	8% Chrysotile	40% Cellulose 10% Synthetic 42% Non-Fibrous
			Total Asbestos:	**8%**	
15-04-01036-005	447		Black Tar-Like; Fibrous; Homogeneous	8% Chrysotile	15% Cellulose 77% Non-Fibrous
			Total Asbestos:	**8%**	

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01036
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01036-006	448		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
15-04-01036-007	449		Black Tar-Like; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-01036-008	450		Black Tar-Like; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
15-04-01036-009	451		Black Tar-Like; Homogeneous	NAD	5% Cellulose 95% Non-Fibrous
15-04-01036-010	452		Black Tar-Like; Fibrous; Inhomogeneous	8% Chrysotile	25% Cellulose 5% Fibrous Glass 10% Synthetic 52% Non-Fibrous
			Total Asbestos:	**8%**	
Chrysotile present in black tar-like material.					
15-04-01036-011	453			Did Not Analyze (Positive Stop)	
15-04-01036-012	454			Did Not Analyze (Positive Stop)	
15-04-01036-013	455		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	40% Cellulose 5% Fibrous Glass 10% Synthetic 45% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01036
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01036-014	456		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	45% Cellulose 10% Fibrous Glass 10% Synthetic 35% Non-Fibrous
15-04-01036-015	457		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	45% Cellulose 10% Fibrous Glass 10% Synthetic 35% Non-Fibrous
15-04-01036-016	458		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	45% Cellulose 10% Fibrous Glass 10% Synthetic 35% Non-Fibrous
15-04-01036-017	459		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	40% Cellulose 20% Fibrous Glass 5% Synthetic 35% Non-Fibrous
15-04-01036-018	460		Black Tar-Like; Black/Brown Fibrous; Inhomogeneous	NAD	40% Cellulose 20% Fibrous Glass 5% Synthetic 35% Non-Fibrous
15-04-01036-019	461		Black Tar-Like; Fibrous; Inhomogeneous	NAD	30% Cellulose 10% Fibrous Glass 5% Synthetic 55% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01036
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01036-020	462		Black Tar-Like; Fibrous; Inhomogeneous	NAD	30% Cellulose 10% Fibrous Glass 5% Synthetic 55% Non-Fibrous
15-04-01036-021	463		Black Tar-Like; Fibrous; Inhomogeneous	NAD	30% Cellulose 10% Fibrous Glass 5% Synthetic 55% Non-Fibrous
15-04-01036-022	464		Black Tar-Like; Fibrous; Inhomogeneous	10% Chrysotile	15% Cellulose 5% Fibrous Glass 5% Synthetic 65% Non-Fibrous
			Total Asbestos:	**10%**	
Chrysotile present throughout.					
15-04-01036-023	465			Did Not Analyze (Positive Stop)	
15-04-01036-024	466			Did Not Analyze (Positive Stop)	
15-04-01036-025	467		Beige Granular; White Paint-Like; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous
15-04-01036-026	468		Beige Granular; White Paint-Like; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-01036
Project/Test Address: Mill #14; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-01036-027	469		Beige Granular; White Paint-Like; Inhomogeneous	NAD	2% Cellulose 98% Non-Fibrous

QC Sample: 77-M22010-4
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Timothy Harris

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

Environmental Hazards Services, L.L.C

Client Number: 07-2564 **Report Number:** 15-04-00106
Project/Test Address: Mill #1; Vernon, CT

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
15-04-00106-006	182		Beige Granular; Homogeneous	NAD	100% Non-Fibrous
15-04-00106-007A	183	Tile	Brown Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00106-007B	183	Mastic	Black Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00106-008A	184	Tile	Brown Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00106-008B	184	Mastic	Black Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous
15-04-00106-009A	185	Tile	Brown Vinyl; Homogeneous	NAD	100% Non-Fibrous
15-04-00106-009B	185	Mastic	Black Adhesive; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous

99 PLM

EHS Laboratories

Asbestos Chain-of-Custody

15-04-00114

Due Date:
04/06/2015
(Monday)
AE

NJC

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340

City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com

Acct. Number: 07-2564

Project Name and Address: MILL # 14 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	1-3	3/26/15	X	Positive Stop	TSI	SEE ROSTER	Bulks
2	4-6				TSI		
3	7-9				TSI		
4	10-12				Floortile-mastic		
5	13-15				Ceiling tiles		
6	16-18				Sheetrock-wall system		
7	19-21				Panel Adhesive only		
8	22-24				TSI		
9	25-27				Sheetrock-Ceiling system		
10	28-30				Ceiling tiles		
11	31-33				Glue Daubs		
12	34-36				Floortile-mastic		
13	37-39				Carbase-glue		
14	40-42				Linoleum-mastic		X
15	43-45	✓	✓	✓	Silver Paint	X	

Released by: C MULLER ✓ Signature: CM date: 3/31/15

Received by: T Wham ✓ Signature: date: 4/1/15

ENCLOSURE 2 PAGE 1 OF 5

EHS Laboratories

Asbestos Chain-of-Custody

114

– For Lab Use Only –

Environmental Hazards Services, LLC

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7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com

City/state/zip: Groton, Ct. 06340

Acct. Number: 07-2564

Project Name and Address: Mill #14 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	46-48	3/26/15	X	POSITIVE STOP	Ceiling tiles	SEE ROSTER	BULKS
2	49-51				Floortile-mastic		
3	52-54				VAPOR BARRIER		
4	55-				GLAZING Compound		
5	56-58				Floortile-mastic		
6	59-61				GLAZING Compound		
7	62-64				CAULKING		
8	65-67				" "		
9	68-70				Covebase-glue		
10	71-73				Floortile-mastic		
11	74-76				Covebase-glue		
12	77-79				Floortile-mastic		
13	80-82				Grout/Adhesive only		
14	83-				Built up Linoleum-glue		✓
15	84-86	✓	✓	✓	TSI	✓	

Released by: CMUELLER Signature: CM date: 3/31/15

Received by: JHiggins Signature: date: 4/1/15

ENCLOSURE 2 PAGE 2 OF 5

EHS Laboratories

Asbestos Chain-of-Custody

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www.leadlab.com
(800)347-4010
(804)275-4907 (fax)
7469 Whitepine Rd
Richmond, VA
23237

X Sample 416 not Rec'd KF 4/1/15

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Accl. Number: 07-2564

Project Name and Address: MILL #14 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	87-89	3/26/15	X	POSITIVE STOP	Ceiling tiles	SEE ROSTER	BULKS
2	90-92				Sheetrock-WALL SYSTEM		
3	93-95				Cove base-glue		
4	96-98				" "		
5	99-101				" "		
6	102-104				CARPET GLUE		
7	105-107				CAULKING		
8	108-110				" "		
9	111				GLAZING COMPOUND		
10	112-114				CAULKING		
11	115-117				FLASHING MASTIC		
12	410-412				BLACK FIBERFELT INSULATORS		
13	413-416	↓	↓	↓	STAIR TREAD-ADHESIVE	↓	↓
14							
15							

Released by: C MULLER Signature: CM date: 3/31/15

Received by: Thibeau Signature: date: 4/1/15

ENCLOSURE 2 PAGE 3 OF 5

EHS Laboratories

27 PLM

Asbestos Chain-of-Custody

15-04-01036

Due Date:
04/13/2015
(Monday)
AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: Mill #14 City/State(required) Vernon, CT

Collected by: B.W. + C.M. Signature CM Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

ENCLOSURE 2 PAGE 4 OF 5

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	443	4/6	X	Positive Stop	ROOFING	SEE ROSTER	
2	444						
3	445						
4	446						
5	447						
6	448						
7	449-451						
8	452-454						
9	455-457						
10	458-460						
11	461-463						
12	464-466						
13	467-469	↓	↓	↓	↓	↓	
14							
15							

Released by: C Mueller Signature: CM date: 4/6/15

Received by: Tobam Signature: date: 4/8/15

EHS Laboratories

9 PLM

Asbestos Chain-of-Custody

15-04-00106

Due Date:
04/06/2015
(Monday)
AE

Environmental Hazards Services, LLC

www.leadlab.com
(800)347-4010
(804)275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

CompanyName: Mystic Air Quality Consultants Address: 1204 North Rd., Groton, CT 06340 City/state/zip: Groton, Ct. 06340

Phone: 860 449 8903 Fax: 860 449 8903 E-mail: maqc2@aol.com Acct. Number: 07-2564

Project Name and Address: MILL #1 & #14 City/State(required) VERNON, CT

Collected by: B.W. + C.M. Signature Mystic Air Client: GZA

Turn around time: Standard ✓ One day ____ (will call ahead)

No.	Client's Sample No.	Date Collected 2015	PLM Analysis	Other Analysis Specify	Material Description	Sample Location	Comments
1	177-179	3/27/15	X	Positive Stop	Sheetrock-wall system	MILL #1 SEE ROSTER	BULKS
2	180-182	↓	↓	↓	Plaster Skim Coat	MILL #1	
3	183-185	↓	↓	↓	Floortile-mastic	MILL #14 & OFFICE #11	↓
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Released by: C Muller Signature: date: 3/31/15

Received by: Signature: date: 4/1/15

ENCLOSURE 2 PAGE 5 OF 5

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #14 VERNON, CT FORMER "AMERBELLE" **DATE:** 03/26/15

☑ Demo ☑ Pre-Reno ☑ Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
1-3	SMALL DIAMETE PIPE FITTING T.S.I.	>100 ft²/ALL	DAMAGED	THROUGH OUT
4-6	SMALL DIAMETER PIPE RUN T.S.I. (AIRCELL)	"		" "
7-9	SMALL DIAMETER PIPE RUN T.S.I. (BLOCK)	"		" "
10-12	12"X12" FLOOR TILE + MASTIC	50 ft²		OFFICE #1
13-15	CEILING TILES	50 ft²		" "
16-18	SHEETROCK WALL SYSTEM	200 ft²		BATH #1 + OFFICE #3
19-21	PANEL ADHESIVE	"		" "
22-24	LARGE DIAMETER PIPE RUN T.S.I.	>100 ft²/ALL		THROUGH OUT
25-27	SHEETROCK CEILING SYSTEM	>1000 ft²/ALL		" "
28-30	2x4 CEILING TILES	100 ft²		OFFICE #3
31-33	CEILING TILE GLUE DAUBS	"		" "
34-36	12x12" FLOOR TILE + MASTIC (GREEN)	275 ft²		" "
37-39	COVE BASE + ADHESIVE (BLUE)	8 ft²		" "
40-42	LINOLEUM + MASTIC	300 ft²		DYE MIXING LOCKER ROOM
43-45	SILVER PAINT ON DUCT WORK	>500 ft²/ALL		THROUGH OUT
46-48	CEILING TILES	145 ft²		OFFICE #4
49-51	12"X12" FLOOR TILE + MASTIC (GRAY)	"		" "
52-54	VAPOR BARRIER	>10,000/ALL		UNDER WOOD PLANK FLOORS
55	WGC	(SMALL) 2 WINDOWS		LOADING DOCK (TOP OF WALL)
56-58	9"X9" FLOOR TILE + MASTIC	1000 ft²		UPPER LEVEL (2 LANES)
59-61	WGC	(LARGE) 32 WINDOW		UPPER LEVEL @ EXTERIOR WALLS (BOTH SIDES)
62-64	WINDOW CAULKING (WHITE)	"		" " "

COMMENTS: WGC = WINDOW GLAZING COMPOUND

Inspector: B. WOODARD C. MULLER

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL #14
VERNON, CT
FORMER "AMERELLE"

DATE: 03/26/15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
65-67	WINDOW CAULKING	(LARGE) 32 WINDOWS	DAMAGED	UPPER LEVEL @ EXTERIOR WALLS (BOTH SIDES)
68-70	COVE BASE + ADHESIVE (BROWN)	12 FT²		OFFICES #5
71-73	FLOOR TILE + MASTIC (ORANGE)	225 FT²		" "
74-76	COVE BASE + ADHESIVE (TAN)	5 FT²		UPPER LEVEL - WOMENS
77-79	12X12 FLOOR TILE + MASTIC (WHITE)	27 FT²		" " "
80-82	CERAMIC FLOOR TILE GROUT + SET COAT	100 FT²		" " "
83	BUILT-UP LINOLEUM + MASTIC	120 FT²		" " "
84-86	LARGE DIAMETER PIPE FITTING TSI.	>100 FT/ALL		THROUGH OUT
87-89	2X4 CEILING TILES	2000 FT²		OFFICES 4 TO 10
90-92	SHEETROCK WALL SYSTEM	3500 FT²		OFFICES 6 TO 10
93-95	COVE BASE + ADHESIVE (BLACK)	35 FT²		OFFICE 7
96-98	COVE BASE + ADHESIVE (BROWN)	15 FT²		OFFICE 9 + 7
99-101	COVE BASE + ADHESIVE (BLUE)	20 FT²		OFFICE 6, 8 + 9
102-104	CARPET GLUE	900 FT²		ASSOCIATED HALLWAY AND OFFICE 6, 8, 9 + 10
105-107	CAULKING	METAL DOORS		EXTERIOR
108-110	"	WINDOWS		EXTERIOR
112-114	"	VENTS		EXTERIOR
115-117	FLASHING	VENTS		BLUE VENTS @ LEFT SIDE OF BLACK
111	WINDOW GLAZING			EXTERIOR GARAGE DOOR SIDE LOADING
3/30/15 183-185	12"X12" FLOOR TILE + MASTIC (TAN)	130 FT²		OFFICE #11
3/31/15 410-412	BLACK BLOCKING	FLOOR DEBRIS		"BULLDOG" FUSE/ELEC. INSULATOR
413-416	STAIR TREAD + ADHESIVE	8 STEPS	V	FROM 14 TO 11 BASEMENT

COMMENTS:

Inspector: C. MULLEN, B. WOODARD

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com maqc2@aol.com 800 247-7746

SUSPECT ASBESTOS CONTAINING MATERIALS ROSTER

SITE: MILL # 14
VERNON, CT
FORMER "AMERELLE"

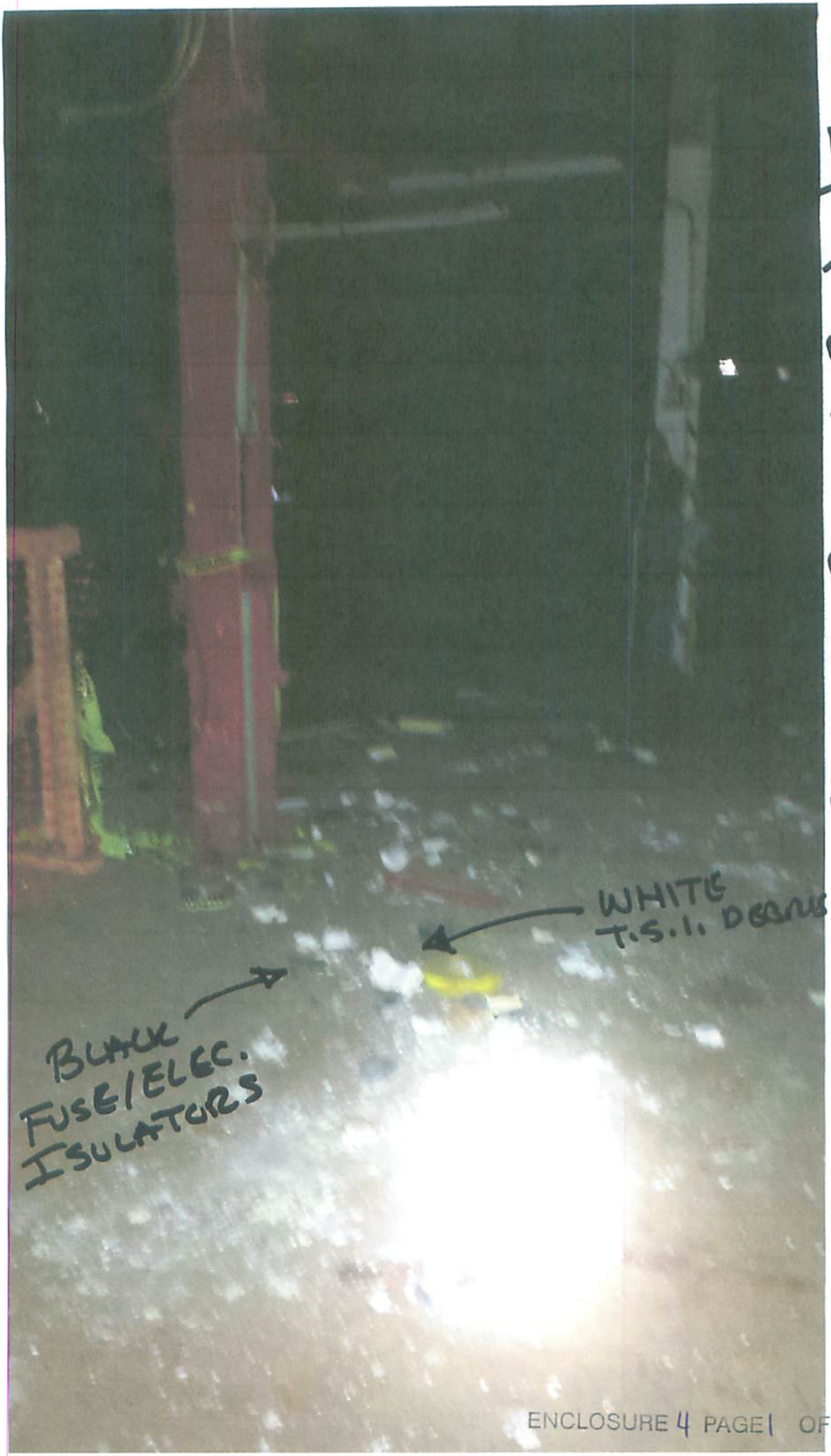
DATE: 4 / 6 / 15

✓Demo ✓Pre-Reno ✓Limited&Directed

Sample Numbers	Type of Material	Quantity	Condition	Location of Materials
443	SHINGLE, FIELD	80 FT²	DAMAGED	OVER-HANG @ REAR LOADING DOCK
444	FELT, FIELD	80 FT²		" " "
445	BUILT-UP, FIELD	600 FT²		FLAT ROOF " "
446	FLASHING	100 FT²		" " " EDGES + PENITRATIONS
447	FLASHING	60 FT²		EDGES + PENITRATIONS @ DBL DOOR LOADING DOCK
448	BUILT-UP, FIELD	850 FT²		" " " ROOF FIELD, UNDER EPDM
449-451	BUILT-UP, FIELD	35,000/ALL		UNDER EPDM MAIN ROOF + STAIRWELL ROOF
452-454	FLASHING	1200/ALL		" "
455-457	BUILT-UP, FIELD	20,000/ALL		MAIN ROOF W/ STONE BALLAST (TOP)
458-460	BUILT-UP, FIELD	"		" " " (BOTTOM)
461-463	FLASHING	2000/ALL		" " " EDGES + PENITRATIONS
464-466	BLACK FLASHING + WRAP	400 LNFT		DUCT WORK @ ROOF
467-469	WHITE FLASHING + WRAP	20 LNFT		" "

COMMENTS: _____

Inspector: B. WOODARD C. MULLEN

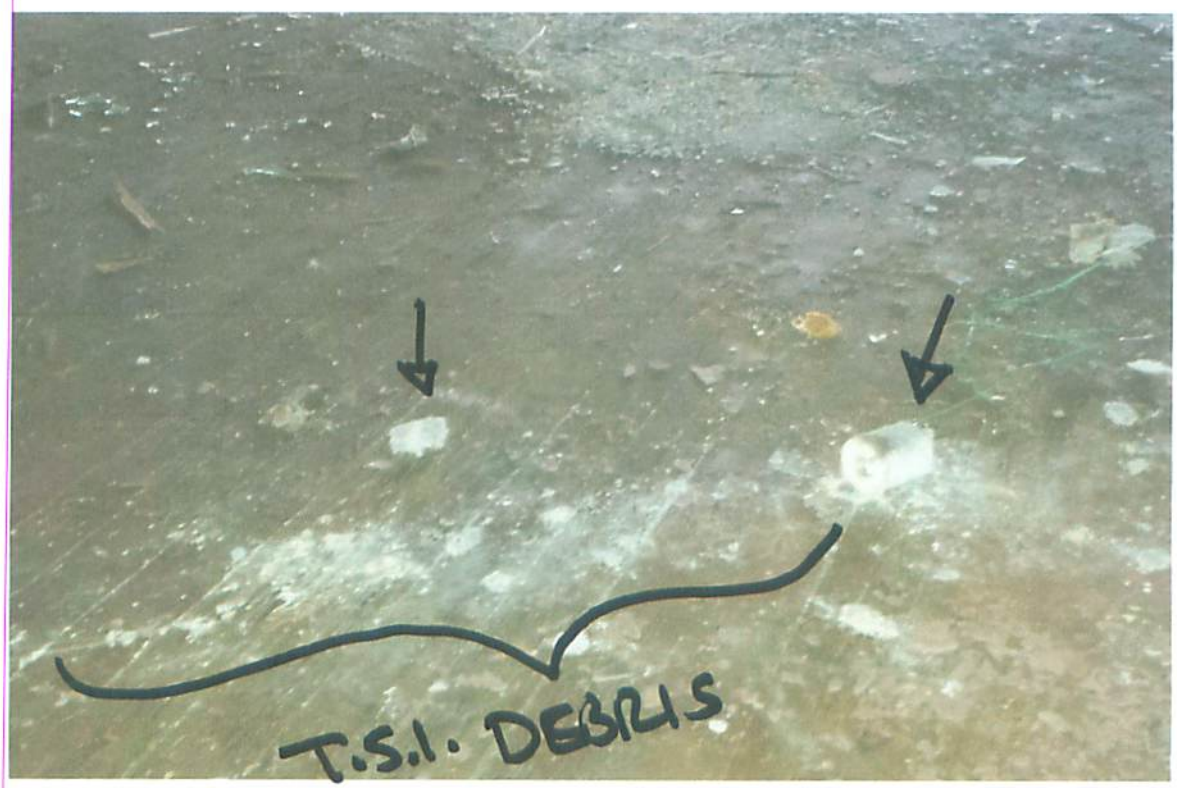

MILL 14 1ST FLOOR
TYPICAL DEBRIS FALLEN FROM PIPES ABOVE W/ OTHER DEBRIS
WHITE T.S.I. DEBRIS
BLACK FUSE/ELEC. ISULATORS

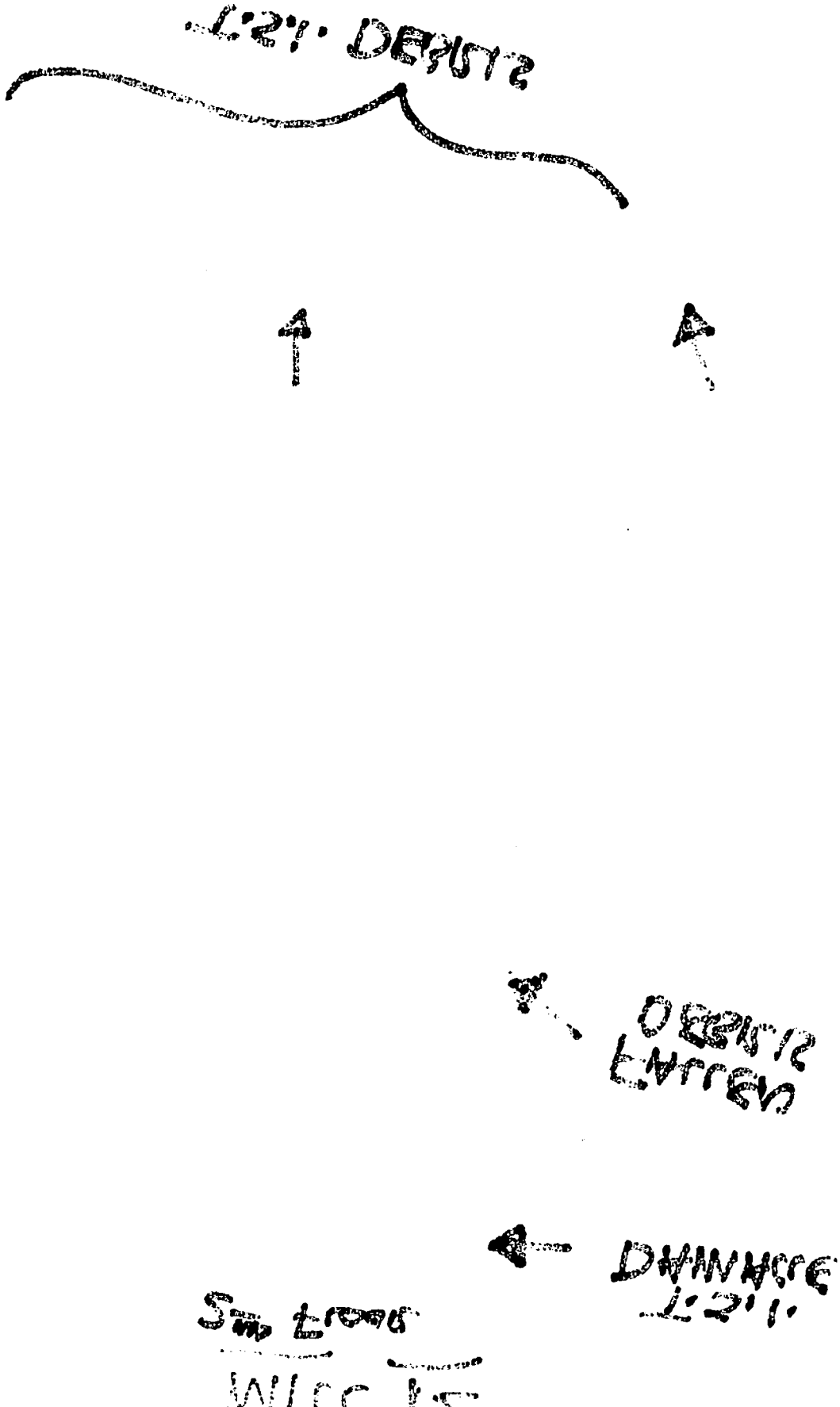
WHITE

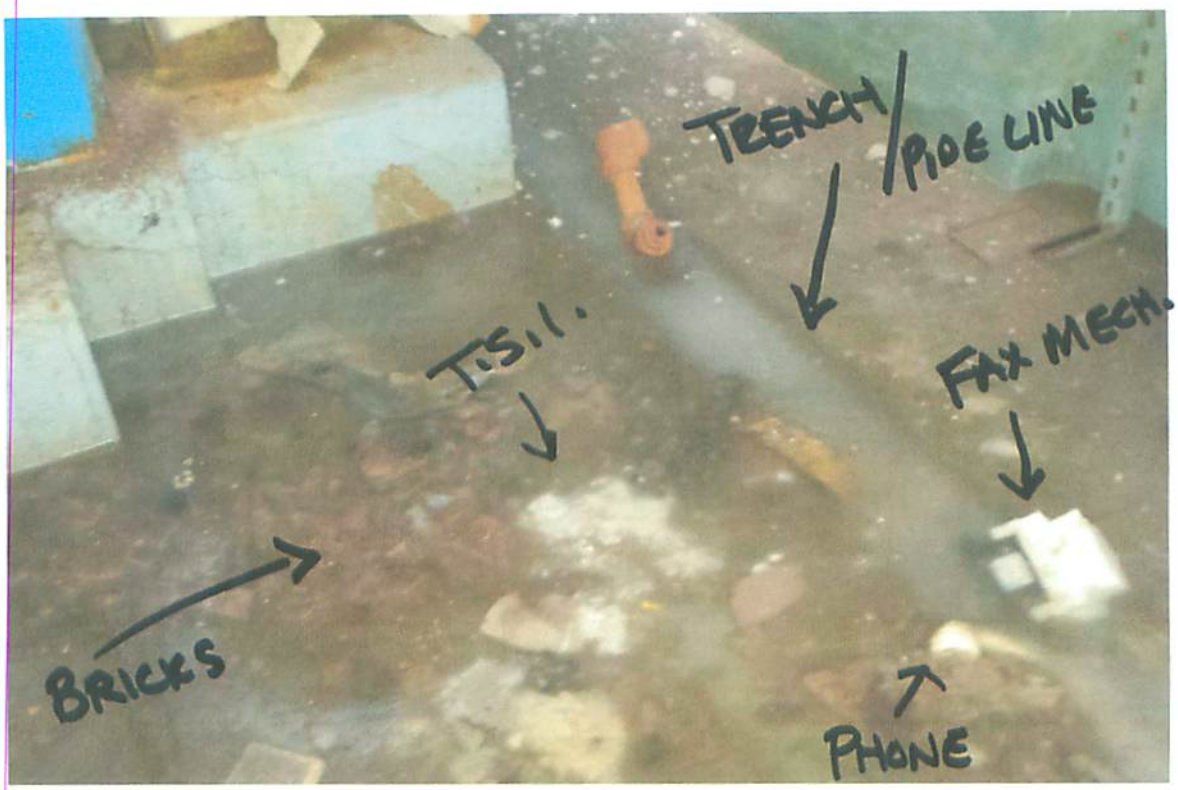
BLACK

MILL 14

2ND FLOOR

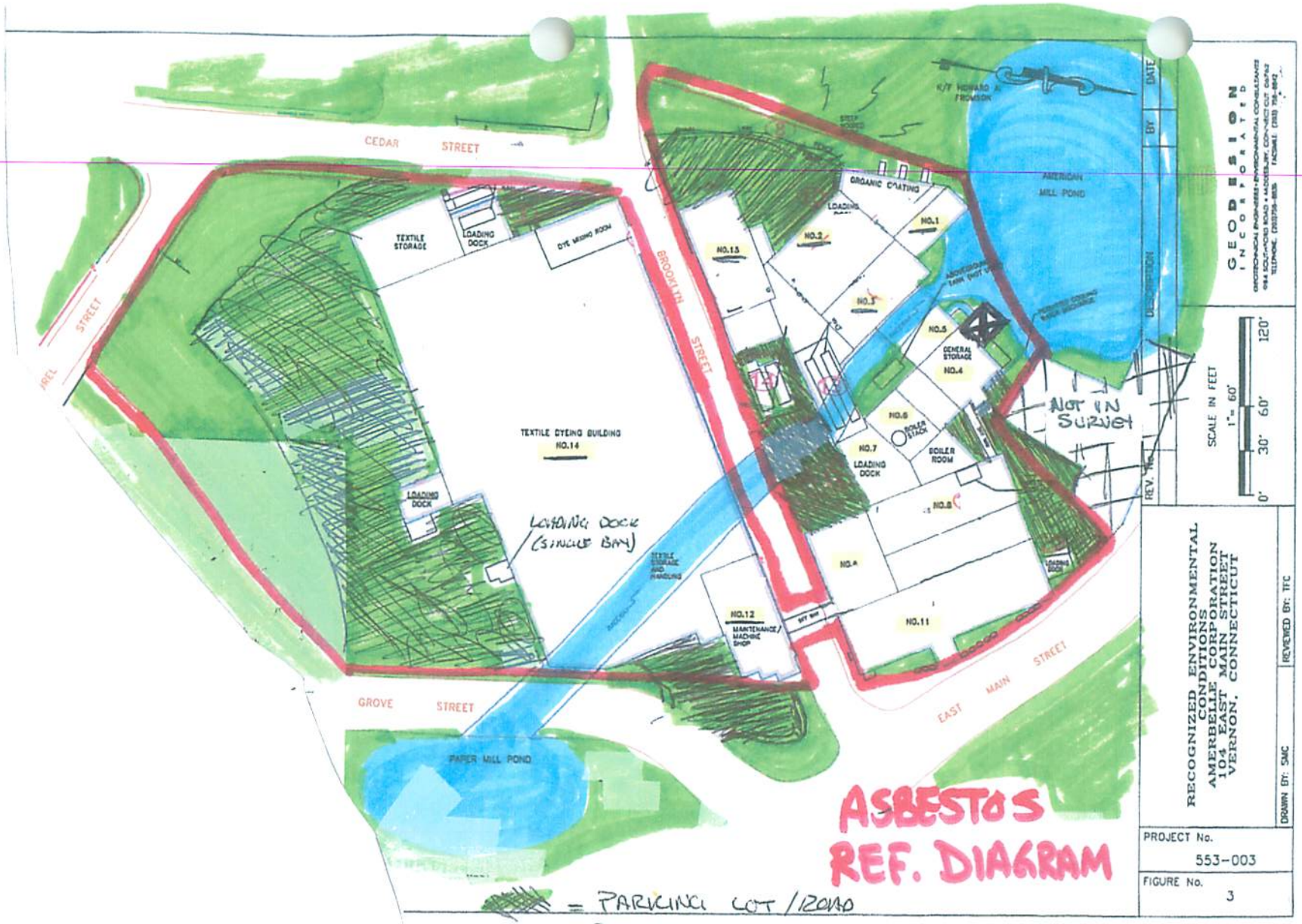



L2'1" DEPTH
DEPTH ENTRY
DIAMETER L2'1"
SM. TREES WITH IS

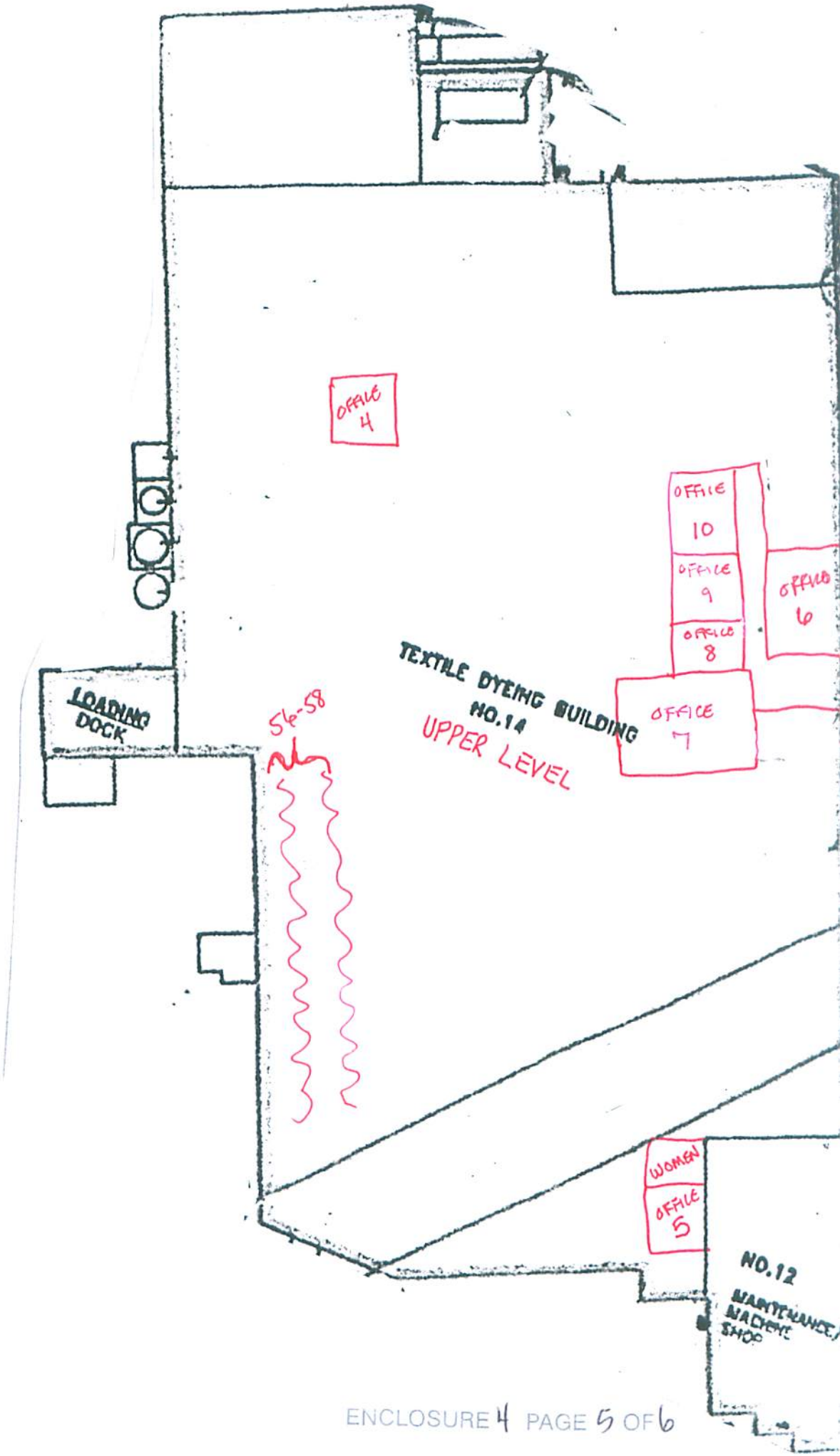


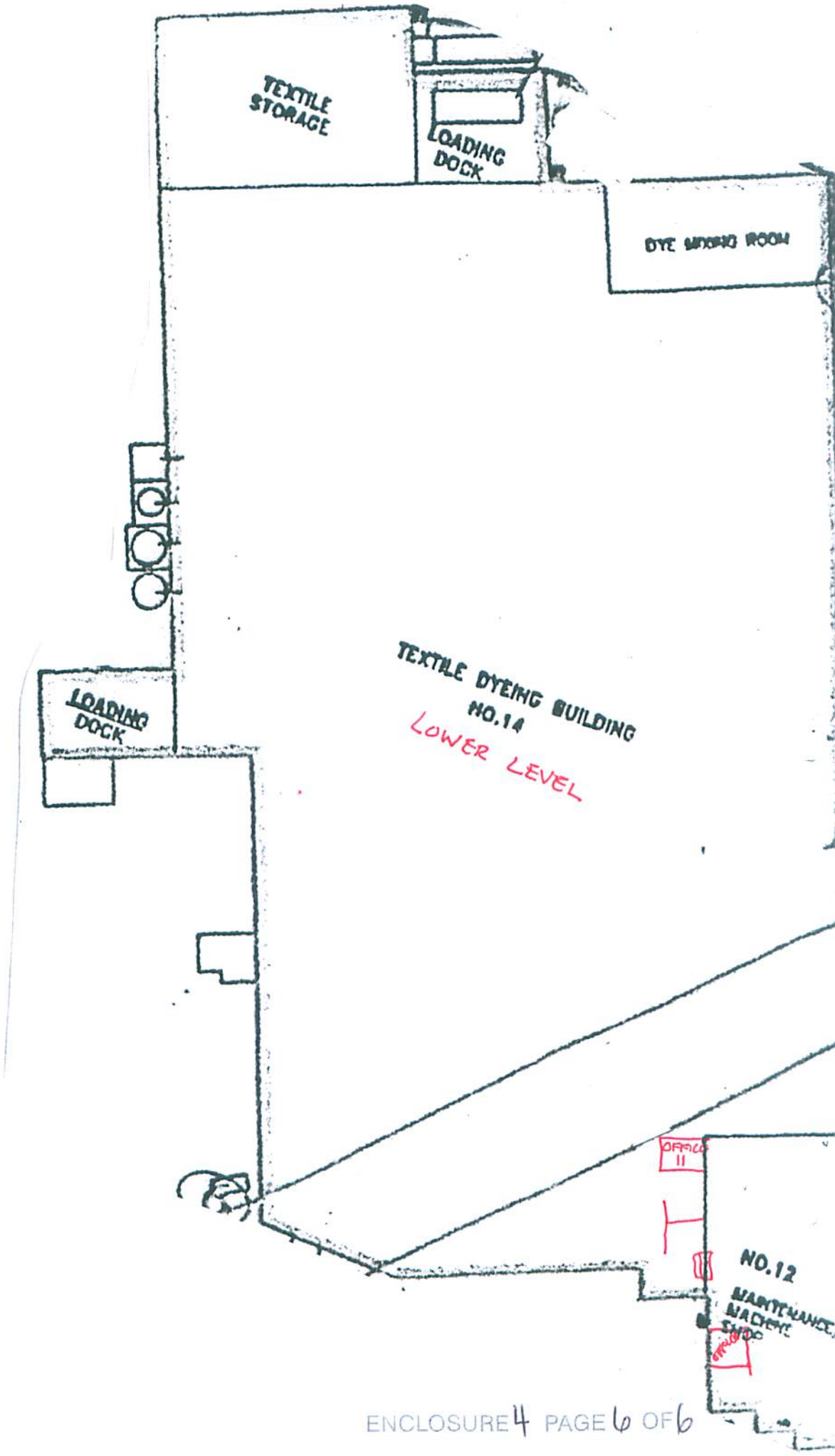
104 EAST MAIN STREET
VERNON, CT

(*) TYPICAL DEBRIS SEEN, FROZEN IN 2" TO 12", MORE IN TRENCHES + PIPE LINES.



ENCLOSURE 4 PAGE 4 OF 6


OFFICE 4
OFFICE 10
OFFICE 9
OFFICE 8
OFFICE 6
OFFICE 7
TEXTILE DYEING BUILDING NO. 14
UPPER LEVEL
LOADING DOCK
56-58
WOMEN
OFFICE 5
NO. 12
MAINTENANCE MACHINE SHOP


TEXTILE STORAGE
LOADING DOCK
DYE MIXING ROOM
LOADING DOCK
TEXTILE DYEING BUILDING NO. 14
LOWER LEVEL
OFFICE 11
NO. 12
MAINTENANCE MACHINE SHOP

EHS Laboratories

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead TCLP Analysis Report

Report Number: 15-04-00070

Client: Mystic Air Quality Consultants
1204 North Road Rt. 117
Groton, CT 06340

Received Date: 04/01/2015
Analyzed Date: 04/03/2015
Reported Date: 04/03/2015

Project/Test Address: Mill #14; Vernon, CT

Client Number:
07-2564

Fax Number:
860-449-8860

Laboratory Results

Lab Sample Number	Client Sample Number	Sample Description	Sample Weight (g)	Concentration ppm (mg/L)	Narrative ID
15-04-00070-001	TCLP-Pb	Bldg. Debris	100	0.72	

Regulatory Limit: 5.0 mg/L

Reporting Limit: 0.50 mg/L

Method: EPA SW846 1311/3010A/7000B

Analyst: Elaine King

Reviewed By Authorized Signatory: Tasha Eaddy

Tasha Eaddy
QA/QC Clerk

Method EPA SW846 1311 recommends 100g for analysis.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. All internal quality control requirements associated with the batch were met, unless otherwise noted. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714.

Legend g = gram ppm = parts per million mg/L = milligrams per liter

ENCLOSURE 5 PAGE 1 OF 2

1 Pb TCLP

15-04-00070

Due Date:
04/06/2015
(Monday)
AE

Metals Chain-of-Custody

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Mystic Air Quality Consultants Address: 1204 North Rd., Rt. 117 City/State/Zip: Groton, Ct. 06340

Phone: 860-449-8903 Fax: 860-449-8860 E-mail: MAQCLABS@AOL.COM Acct. Number: 07-2564

Project Name/Testing Address: MILL # 14 City/State(required) VERNON, CT

Collected by: B. WOODARD / C. MULLIGAN Certification Number: N/A Purchase Order Number: GIZA

Turn Around Times: *If no TAT is specified, sample(s) will be processed and charged as 3 - day TAT.*

____ 1 - Day ____ 2 - Day ____ 3 - Day ____ Same Day (Must Call Ahead) ____ Weekend (Must Call Ahead)

No.	Client Sample ID	Date Collected	METALS					OTHER METALS	PARTICULATES					AIR			Comments
		2015	Pb TCLP	TCLP RCRA 8	RCRA 8 Total Metals	Toxic Metal Profile	Welding Fume Profile		Total Nuisance Dust	Respirable Dust	TSP Gravimetric	TSP Pb	PM- 10	Flow Rate (L / min)	Total Time (minutes)	Volume (Total Liters)	
1	TCLP-Pb	03-31	X														COMPOSITE
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Released by: C. MULLIGAN Signature: [illegible] Date/Time: 03-31-15 / 1600

TSTONE JSTONE Date/Time: 4/1/15

ENCLOSURE 5 PAGE 2 OF 2

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/26/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

@ MILL 14 + 12 HAVE FROZEN FLOORS, TRENCHES, POOLS + PIPE LINE @ FLOOR. PACM IS SEEN BUT NOT TESTED. DEBRIS IS ASSOCIATED TO MATERIALS SAMPLED (PIPE T.S.I., SHEETROCK ...)

ENCLOSURE 6 PAGE 1 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 03/31/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FREY

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

MILLS 5, 8 + SMALL BLDG (BEHIND MILL 4) - SAME NOTE AS 3/26

⊛ BLUE STEEL BLDG. HAS 2 LARGE TANKS WITH NO INTERIOR PACM OR PAINTED SURFACES. SUSPECT RTU/HVAC HAS 4 PENETRATIONS OF SUSPECT ACM.

ENCLOSURE 6 PAGE 2 OF 3

HYGIENIST'S NAME B. WOODWARD C. MULLER

HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

Mystic Air Quality Consultants

1204 North Road (Rt. 117)
Groton, CT 06340

Date 04/06/15

DAILY JOB LOG

Page 1 of ___

Client GZA Site Supervisor CHRIS FEEN

Site Location 104 EAST MAIN STREET - VERNON, CT

GENERAL OBSERVATIONS Containment Location - SAME -

- ON-SITE TO CONDUCT AN ASBESTOS & TCLP-PB SAMPLE COLLECTION.

ENCLOSURE 6 PAGE 3 OF 3

HYGIENIST'S NAME B. WOODARD C. MULLER HYGIENIST'S SIGNATURE

TIME ON SITE: TIME OFF SITE:

Telecommunications
Office: 860 449 8903
Nights & Weekends: 860 464 2050

ProScience Analytical Services, Inc

Stephen Raymond
GZA GeoEnvironmental, Inc., NH
5 Commerce Park North
Suite 201
Bedford, NH 03110

November 19, 2015

Dear Stephen Raymond,

The enclosed analytical results have been obtained by using the EPA/600/R-93/116 method. The "Visual Estimate" quantitative method is generally used for determining the percentage of asbestos and other components of the sample. "The Point Counting" method may also be used upon client request or at the analyst discretion. The Point Count method is usually recommended when the sample contains less than 10% asbestos by Visual estimate. Asbestos content less than 1% is recorded on the report as TR (trace).

The Quality Control data related to the samples analyzed is available upon client's written request. ProScience Analytical Services Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested.

If you have any questions please contact the Laboratory Manager or the Laboratory Director.

Sincerely,

Patricia Weakley, Optical Asbestos Manager

Aimee Cormier, Laboratory Director

Enclosure: Version 2
LAB BATCH ID: B 98762 CLIENT PROJECT ID: 04.0045441.02
Client Ref: 104 East Main Street, Vernon Rockville, CT
AIHA ID# 102754; CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056; NVLAP Lab Code 200090-0; RI ID # AAL-093; VT ID# AL016876

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-01	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-01B	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-01C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-02	Gray	90	0	0	0	0	0	0	0	TR	0	0	0	10

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-02B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Duct Expansion Cloth
Location: N/A
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-03	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Client Name: GZA GeoEnvironmental, Inc., NH
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Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-03B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-03C	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-04	Purple	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-04B	Blue	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-05	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-05B	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Client Name: GZA GeoEnvironmental, Inc., NH
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Batch: B98762
Date Sampled: 11/9/2015
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-06	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Ceiling Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-06B	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Ceiling Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-06C	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Ceiling Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-07	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Homosote
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-07B	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Homosote
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-07C	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Homosote
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
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Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-08	Brown	0	0	0	0	0	0	0	0	60	0	0	0	40

Description: Duct Tape
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-08B	Brown	0	0	0	0	0	0	0	0	60	0	0	0	40

Description: Duct Tape
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-08C	Brown	0	0	0	0	0	0	0	0	60	0	0	0	40

Description: Duct Tape
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-09	Black	0	0	0	0	0	0	60	0	20	0	0	0	20

Description: Duct Insulation Paper
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-09B	Black	0	0	0	0	0	0	60	0	20	0	0	0	20

Description: Duct Insulation Paper
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-09C	Black	0	0	0	0	0	0	60	0	20	0	0	0	20

Description: Duct Insulation Paper
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-09D	Black	0	0	0	0	0	0	60	0	20	0	0	0	20

Description: Duct Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-09E	Black	0	0	0	0	0	0	60	0	20	0	0	0	20

Description: Duct Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-09F	Black	0	0	0	0	0	0	60	0	20	0	0	0	20

Description: Duct Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-10	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Caulk
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-10B	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Caulk
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-11	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
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Method: EPA/600/R-93/116

Batch: B98762
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Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-11B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-11C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-12	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-12B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-12C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-13	Brown	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Leveling Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Method: EPA/600/R-93/116

Batch: B98762
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Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-13B	Brown	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Leveling Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-14	Dk. Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Leveling Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-14B	Dk. Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Leveling Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-15	Tan	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Paper from Fire Door
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-15B	Tan	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Paper from Fire Door
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-16	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Seam Sealant
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Batch: B98762
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Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-16B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Seam Sealant
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-16C	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Seam Sealant
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-16D	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Seam Sealant
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-16E	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Seam Sealant
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17	Multi	2	0	0	0	0	0	0	0	0	0	0	0	98

Description: Fire Door Caulk
Location: N/A
Comments: Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments: Analyzed: No

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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17C		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments:
Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17D		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments:
Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17E		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments:
Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17F		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments:
Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17G		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments:
Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17H		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments:
Analyzed: No

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Batch: B98762
Date Sampled: 11/9/2015
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Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-17I		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Fire Door Caulk
Location: N/A
Comments: Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-18	Dk. Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Leveling Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-18B	Dk. Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Leveling Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-19	Dk. Brown	0	0	0	0	0	0	0	0	70	0	0	0	30

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-19B	Dk. Brown	0	0	0	0	0	0	0	0	70	0	0	0	30

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-19C	Dk. Brown	0	0	0	0	0	0	0	0	70	0	0	0	30

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-20	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-20B	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-20C	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-21	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-21B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-21C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
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Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-22	Beige	20	0	0	0	0	0	0	0	10	0	0	0	70

Description: Sheet Flooring
Location: N/A
Comments: Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-22B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Sheet Flooring
Location: N/A
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-23	Yellow	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Sheet Flooring Adhesive
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-23B	Yellow	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Sheet Flooring Adhesive
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-24	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Sheet Flooring
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-24B	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Sheet Flooring
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-25	Gray	60	0	0	0	0	0	0	0	0	0	0	0	40

Description: Felt Backing
Location: N/A
Comments: Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-25B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Felt Backing
Location: N/A
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-26	White	0	0	0	0	0	0	95	0	TR	0	0	0	5

Description: Tank Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-26B	White	0	0	0	0	0	0	95	0	TR	0	0	0	5

Description: Tank Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-26C	White	0	0	0	0	0	0	95	0	TR	0	0	0	5

Description: Tank Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-27	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
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Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-27B	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-27C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-28	White	0	0	0	0	0	0	95	0	0	0	0	0	5

Description: Duct Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-28B	White	0	0	0	0	0	0	95	0	0	0	0	0	5

Description: Duct Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-28C	White	0	0	0	0	0	0	95	0	0	0	0	0	5

Description: Duct Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-29	Silver	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Foil Cover on Fiberglass Batt Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

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PO #: 8629
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Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: **B98762**
Date Sampled: 11/9/2015
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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-29B	Silver	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Foil Cover on Fiberglass Batt Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-30	Multi	0	0	0	0	0	0	90	0	5	0	0	0	5

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-30B	Multi	0	0	0	0	0	0	95	0	0	0	0	0	5

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-31	White	0	0	0	0	0	0	95	0	TR	0	0	0	5

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-31B	White	0	0	0	0	0	0	95	0	TR	0	0	0	5

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-32	White	0	0	0	0	0	0	95	0	TR	0	0	0	5

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
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Date Analyzed: 11/18/2015
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-32B	White	0	0	0	0	0	0	95	0	TR	0	0	0	5

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-33	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Caulk
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-33B	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Caulk
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-34	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Caulk
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-34B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Duct Caulk
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-35	Brown	0	0	0	0	0	0	0	0	0	0	70	0	30

Description: Interior Duct Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

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Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-35B	Brown	0	0	0	0	0	0	0	0	0	0	70	0	30

Description: Interior Duct Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-35C	Brown	0	0	0	0	0	0	0	0	0	0	70	0	30

Description: Interior Duct Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-36	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-36B	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-36C	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-37	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

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PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: **B98762**
Date Sampled: 11/9/2015
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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-37B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-38	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-38B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-39	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-39B	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-40	Multi	0	0	0	0	0	0	20	0	40	0	0	0	40

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-40B	Multi	0	0	0	0	0	0	20	0	40	0	0	0	40

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-41	Multi	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Homosote
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-41B	Multi	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Homosote
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-42	Multi	80	0	0	0	0	0	0	0	TR	0	0	0	20

Description: Insulation Cover
Location: N/A
Comments: Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-42B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Insulation Cover
Location: N/A
Comments: Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-43	Brown	0	0	0	0	0	0	95	0	0	0	0	0	5

Description: Fire Door Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
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Method: EPA/600/R-93/116

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-43B	Brown	0	0	0	0	0	0	95	0	0	0	0	0	5

Description: Fire Door Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-43C	Brown	0	0	0	0	0	0	95	0	0	0	0	0	5

Description: Fire Door Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-44	Brown	0	0	0	0	0	0	0	0	0	90	0	0	10

Description: Canvas Backed Joint
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-44B	Brown	0	0	0	0	0	0	0	0	0	90	0	0	10

Description: Canvas Backed Joint
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-44C	Brown	0	0	0	0	0	0	0	0	0	90	0	0	10

Description: Canvas Backed Joint
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-45	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

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PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-45B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-45C	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-46	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-46B	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-46C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-47	Silver	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Pumice Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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PO #: 8629
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Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
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Date Received: 11/12/2015
Date Analyzed: 11/18/2015
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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-47B	Silver	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Pumice Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-47C	Silver	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Pumice Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-48	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-48B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-48C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-49	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Method: EPA/600/R-93/116

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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-49B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-49C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-50	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-50B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-50C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-51	Gray	40	0	0	0	0	0	0	0	0	0	0	0	60

Description: Cementitious Panel
Location: N/A
Comments:
Is asbestos present? Yes. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-51B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Cementitious Panel
Location: N/A
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52B	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52C	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52D	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52E	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Client Reference: 104 East Main Street, Vernon Rockville, CT
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52F	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52G	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52H	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-52I	Beige	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Skim Coat
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-53	Tan	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-53B	Tan	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-54	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-54B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-54C	Gray	0	0	0	0	0	0	TR	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-55	Gray	0	0	0	0	0	0	0	0	0	3	0	0	97

Description: Plaster, Base Coat
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-55B	Gray	0	0	0	0	0	0	0	0	0	3	0	0	97

Description: Plaster, Base Coat
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-55C	Gray	0	0	0	0	0	0	0	0	0	3	0	0	97

Description: Plaster, Base Coat
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-56	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-56B	White	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-56C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-57	Gray	0	0	0	0	0	0	0	0	0	5	0	0	95

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-57B	Gray	0	0	0	0	0	0	0	0	0	3	0	0	97

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-57C	Gray	0	0	0	0	0	0	0	0	TR	TR	0	0	100

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
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Date Received: 11/12/2015
Date Analyzed: 11/18/2015
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-57D	Gray	0	0	0	0	0	0	0	0	0	3	0	0	97

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-57E	Gray	0	0	0	0	0	0	0	0	TR	TR	0	0	100

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-57F	Gray	0	0	0	0	0	0	0	0	TR	TR	0	0	100

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-58	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-58B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-58C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Client Name: GZA GeoEnvironmental, Inc., NH
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Batch: B98762
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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-59	Brown	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-59B	Gray	0	0	0	0	0	0	0	0	TR	3	0	0	97

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-59C	Gray	0	0	0	0	0	0	0	0	TR	TR	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-60	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-60B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-60C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-61	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-61B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-61C	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-62	Brown	0	0	0	0	0	0	0	0	0	5	0	0	95

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-62B	Brown	0	0	0	0	0	0	0	0	0	5	0	0	95

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-63	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-63B	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-63C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-64	Gray	0	0	0	0	0	0	0	0	TR	TR	0	0	100

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-64B	Gray	0	0	0	0	0	0	0	0	TR	3	0	0	97

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-64C	Gray	0	0	0	0	0	0	0	0	TR	5	0	0	95

Description: Stone Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-65	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-65B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-65C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-66	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-66B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-66C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: CMU Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-67	Brown	0	0	0	0	0	0	20	0	70	0	0	0	10

Description: Batt Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-67B	Brown	0	0	0	0	0	0	20	0	70	0	0	0	10

Description: Batt Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-67C	Brown	0	0	0	0	0	0	20	0	70	0	0	0	10

Description: Batt Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-68	Brown	0	0	0	0	0	0	10	0	80	0	0	0	10

Description: Batt Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-68B	Brown	0	0	0	0	0	0	10	0	80	0	0	0	10

Description: Batt Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-68C	Brown	0	0	0	0	0	0	10	0	80	0	0	0	10

Description: Batt Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-69	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-69B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-69C	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-70	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-70B	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-70C	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-71	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-71B	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-71C	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-72	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-72B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-72C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-73	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-73B	Tan	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-73C	Tan	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-74	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-74B	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-74C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-75	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Fire Brick
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-75B	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Fire Brick
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-75C	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Fire Brick
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-76	Gray	0	0	0	0	0	0	0	0	0	5	0	0	95

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-76B	Gray	0	0	0	0	0	0	0	0	0	5	0	0	95

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-77	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-77B	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-77C	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-78	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-78B	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-78C	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-79	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-79B	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-79C	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-80	Multi	0	0	0	0	0	0	10	0	80	0	0	0	10

Description: Rock Wool Batt Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-80B	Multi	0	0	0	0	0	0	10	0	80	0	0	0	10

Description: Rock Wool Batt Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-80C	Multi	0	0	0	0	0	0	10	0	80	0	0	0	10

Description: Rock Wool Batt Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-81	Gray	0	0	0	0	0	0	70	0	0	0	0	0	30

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-81B	Gray	0	0	0	0	0	0	70	0	0	0	0	0	30

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-81C	Gray	0	0	0	0	0	0	70	0	0	0	0	0	30

Description: Duct Expansion Cloth
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-82	Brown	0	0	0	0	0	0	0	90	TR	TR	0	0	10

Description: Rock Wool Batt Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-82B	Brown	0	0	0	0	0	0	0	90	TR	TR	0	0	10

Description: Rock Wool Batt Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-82C	Brown	0	0	0	0	0	0	0	90	TR	TR	0	0	10

Description: Rock Wool Batt Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-83	Multi	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-83B	Multi	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Wall Plaster
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Client Reference: 104 East Main Street, Vernon Rockville, CT
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-84	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Boiler Interior Fire Brick
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-84B	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Boiler Interior Fire Brick
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-84C	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Boiler Interior Fire Brick
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-85	Multi	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fire Hose
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-85B	Multi	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fire Hose
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-85C	Multi	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fire Hose
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-86	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-86B	Dk. Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-86C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-87	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-87B	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-87C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-88	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-88B	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-88C	Brown	0	0	0	0	0	0	0	0	90	0	0	0	10

Description: Fiberboard
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-89	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-89B	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-89C	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Floor Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-90	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-90B	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-90C	Multi	0	0	0	0	0	0	20	0	60	0	0	0	20

Description: Fiberglass Pipe Insulation Paper
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-91	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-91B	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-91C	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Joint Compound
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-92	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-92B	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-92C	White	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Joint Tape
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-93	Gray	0	0	0	0	0	0	0	0	TR	TR	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-93B	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-93C	Gray	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Brick Mortar
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-94	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Fire Brick
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-94B	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Fire Brick
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-94C	White	0	0	0	0	0	0	0	0	TR	0	0	0	100

Description: Fire Brick
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-95	White	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-95B	White	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-96	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

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Client Name: GZA GeoEnvironmental, Inc., NH
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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-96B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-97	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-97B	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-98	Green	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-98B	Green	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-99	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-99B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-100	Brown	0	0	0	0	0	0	0	0	60	0	0	0	40

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-100B	Brown	0	0	0	0	0	0	0	0	60	0	0	0	40

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-101	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-101B	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-102	Brown	0	0	0	0	0	0	0	0	60	0	0	0	40

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

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Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-102B	Brown	0	0	0	0	0	0	0	0	60	0	0	0	40

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-103	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-103B	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-104	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-104B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-105	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-105B	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-106	Blue	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-106B	Blue	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-107	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-107B	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-108	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-108B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-109	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-109B	Yellow	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-110	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-110B	Red	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-111	Blue	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-111B	Blue	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-112	Yellow	0	0	0	0	0	0	20	0	0	0	80	0	0

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-112B	Yellow	0	0	0	0	0	0	20	0	0	0	80	0	0

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-113	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-113B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-114	White	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: B98762
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-114B	White	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-115	Orange	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-115B	Orange	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-116	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-116B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-117	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: 8629
Client Project #: 04.0045441.02
Client Reference: 104 East Main Street, Vernon Rockville, CT
Method: EPA/600/R-93/116

Batch: **B98762**
Date Sampled: 11/9/2015
Date Received: 11/12/2015
Date Analyzed: 11/18/2015
Date of Report: 11/19/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
110915B-117B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Electric Wire Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite
Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage.

Analyst: Robert West for:

ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ ; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.

Address: 5 Commerce Park North Suite 201, Bedford, NH 03110

Project #: 04.0045441.02 PO: 8629

Project Site: 104 East Main Street, Vernon Rockville, CT

Contact: Stephen Raymond For sample/analysis questions: Jeremy Boucher

Tel. / Fax #: (603) 494-4189 (603) 380-5017

Email: stephen.raymond@gza.com jeremy.boucher@gza.com

PLM

Chain of Custody

ver 4.2 Updated 8/10/11

Relinquished By: JBT Jeremy Boucher Date: 11/12/15

Received By: Margaret Walsh Date: 11/12/15 3:35 pm

# of Samples 318 Received: _____ Analyzed: _____

Results (email) fax verbal By: _____ Date: _____

Stop on first positive: (Yes) / No

Special Instructions: _____

Analyst / Date: _____ QC by / Date: _____

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915 B	-01	Fiberglass pipe insulation paper																									
	-01B	↓																									
	-01C	↓																									
	-02	Duct expansion cloth																									
	-02B	↓																									
↓	-03	Fiberglass pipe insulation paper																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ ; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J Bt Jeremy Bouch Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	03B	Fiberglass pipe insulation paper																									
|	03C	↓																									
|	04	Electric wire insulation																									
|	04B	↓																									
|	05	↓																									
↓	05B	↓																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

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22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBA Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	06	Ceiling fiberboard																									
↓	06B	↓																									
↓	06C	↓																									
↓	07	Homosote																									
↓	07B	↓																									
↓	07C	↓																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ ; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite (Circle Type)	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	08	Duct tape																									
	08B	↓																									
	08C	↓																									
*	09	Duct Insulation Paper																									
*	09B	↓																									
*	09C	↓																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

* Analyze paper only

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ ; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
* 110915B	09D	Duct Insulation Paper																									
*	09E	↓																									
*	09F	↓																									
	10	Duct Caulk																									
	10B	↓																									
	11	Brick Mortar																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

* Analyze Paper only

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ ; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	11B	Brick Mortar																									
	11C	↓																									
	12	CMU Mortar																									
	12B	↓																									
	12C	↓																									
↓	13	Leveling Compound																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 6/10/11

Relinquished By: J BA Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	13B	Leveling compound																									
	14	↓																									
	14B	↓																									
	15	Paper from firedoor																									
	15B	↓																									
↓	16	Duct Seam Sealant																									

Asbestos Percentage (%): Circle Type

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bovchon Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	16B	Duct Seam Sealant																									
	16C	↓																									
	16D	↓																									
	16E	↓																									
	17	Fire door caulk																									
	17B	↓																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J Bt Jeremy Boucher Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	17C	Fire Door Caulk																									
	17D																										
	17E																										
	17F																										
	17G																										
	17H																										

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	17I	Fire Door Caulk																									
	-18	Leveling Compound																									
	-18B	↓																									
	-19	Floor Paper																									
	-19B	↓																									
↓	-19C	↓																									

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Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
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# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	20	Fiberboard																									
	20B																										
	20C																										
	21	Brick Mortar																									
	21B																										
	21C																										

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBA Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	22	Sheet Flooring																									
	22B	↓																									
	23	Sheet Flooring Adhesive																									
	23B	↓																									
	24	Sheet Flooring																									
↓	24B	↓																									

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* Analyze adhesive only

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBH Jeremy Bovch Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	25	Felt Backing																									
	25B	↓																									
	26	Tank Insulation																									
	26B	↓																									
	26C	↓																									
↓	27	Fiberglass pipe insulation paper																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J Bft Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	27B	Fiberglass pipe insulation paper																									
	27C	↓																									
	28	Duct Insulation																									
	28B	↓																									
	28C	↓																									
*	29	Foil cover on fiberglass batt insulation																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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* Analyze cover only

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

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Analyst / Date:
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Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-29B *	29B	Foil cover on fiberglass batt insulation																									
↓	30	Duct Expansion Cloth																									
↓	30B	↓																									
↓	31	↓																									
↓	31B	↓																									
↓	32	↓																									

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBT Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	32B	Duct Expansion Cloth																									
↓	33	Duct Caulk																									
	33B	↓																									
	34	↓																									
	34B	↓																									
↓	35	Interior Duct Insulation																									

Circle Type

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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PLM
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Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	35B	Interior Duct Insulation																									
↓	-35C	↓																									
	3C	Fiberboard																									
	36B	↓																									
	36C	↓																									
↓	37	CMU Mortar																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAFE = Stereo Scope Asb. % Est.
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PLM
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ver 4.2 Updated 6/10/11

Relinquished By: J.B.A. Jeremy Bouchard Date: 11/12/15
Received By: Date:
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Stop on first positive: (Yes) / No
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Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	37B	CMU Mortar																									
	38	Brick Mortar																									
	38B																										
	39																										
	39B																										
	40	Fiberglass pipe insulation paper																									

Circle Type

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	40B	Fiberglass pipe insulation paper																									
	41	Homosote																									
	41B	↓																									
X	42	Insulation Cover																									
*	42B	↓																									
	43	Fire Door Insulation																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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* Analyze cover only

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBA Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	43B	Fire Door Insulation																									
	43C	↓																									
	44	Canvas backed joint																									
	44B	↓																									
	44C	↓																									
	45	Fiber board																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

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TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ ; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

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Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	45B	Fiberboard																									
	45C	↓																									
	46	Fiberglass pipe insulation paper																									
	46B	↓																									
	46C	↓																									
↓	47	Pumice pipe insulation paper																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J BK Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	47B	Pumice pipe Insulation paper																									
	47C	↓																									
	48	Stone Mortar																									
	48B	↓																									
	48C	↓																									
↓	49	Brick Mortar																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Boucher Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
1109153-	49B	Brick Mortar																									
	49C	↓																									
	50	CMU Mortar																									
	50B	↓																									
	50C	↓																									
	51	Cementitious Panel																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	51B	Cementitious Panel																									
	52	Skim Coat																									
	52B																										
	52C																										
	52D																										
	52E																										

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBT Jeremy Boucher Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	52F	Skim Coat																									
	52G																										
	52H																										
	52I																										
	53	Stone Mortar																									
	53B																										

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bovchon Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	54	Brick Mortar																									
	54B																										
	54C																										
	55	Plaster, base coat																									
	55B																										
	55C																										

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J BA Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	56	Fiberglass pipe insulation paper																									
	56B																										
	56C																										
	57	Wall Plaster																									
	57B																										
	57C																										

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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PLM
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ver 4.2 Updated 8/10/11

Relinquished By: J BA Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	57D	Wall Plaster																									
	57E	↓																									
	57F	↓																									
	58B	Brick Mortar																									
	58B	↓																									
↓	58C	↓																									

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PLM
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ver 4.2 Updated 8/10/11

Relinquished By: J Bf Jeremy Bovchon Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	59	Stone Mortar																									
	59B																										
	59C																										
	60	CMU Mortar																									
	60B																										
	60C																										

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Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J BH Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	61	Floor Paper																									
	61B	↓																									
	61C	↓																									
	62	Wall Plaster																									
	62B	↓																									
	63	Fiberglass pipe insulation paper																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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110915B-	63B	Fiberglass pipe insulation paper																									
	63C	↓																									
	64	Stone mortar																									
	64B	↓																									
	64C	↓																									
↓	65	Brick Mortar																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
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ver 4.2 Updated 8/10/11

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Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-1	65B	Brick Mortar																									
	65C	↓																									
	66	CMU Mortar																									
	66B	↓																									
	66C	↓																									
*	67	Batt Insulation Paper																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

* Analyze paper only

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBT Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
* 110915B-	67B	Batt Insulation Paper																									
*	67C	↓																									
	68																										
	68B																										
	68C	↓																									
↓	69	Floor Paper																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

* Analyze paper only

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____ ; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
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ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
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Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	69B	Floor paper																									
	69C	↓																									
*	70	Joint tape																									
*	70B	↓																									
*	70C	↓																									
	71	Joint Compound																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

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Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	71B	Joint Compound																									
	71C	↓																									
	72	Brick Mortar																									
	72B	↓																									
	72C	↓																									
	73	↓																									

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Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	73B	Brick Mortar																									
	73C	↓																									
	74	Fiberglass pipe insulation paper																									
	74B	↓																									
	74C	↓																									
↓	75	Fire Brick																									

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Relinquished By: J-BF Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	75B	Fire Brick																									
	75C	↓																									
	76	Wall Plaster																									
	76B	↓																									
*	77	Joint Tape ~~Paper~~ JB																									
*	77B	↓																									

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Received By: Date:
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Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
# 110915B-	78C	Joint tape																									
	78	Joint compound																									
	78B	↓																									
	78C	↓																									
	79	Floor Paper																									
↓	79B	↓																									

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Analyze tape only

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Relinquished By: JBK Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	79C	Floor Paper																									
↓	80	Rock wool batt paper																									
	80B	↓																									
	80C	↓																									
	81	Duct expansion cloth																									
↓	81B	↓																									

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110915B-	81C	Duct expansion cloth																									
	82	Rockwool Batt Insulation																									
	82B	↓																									
	82C	↓																									
	83	Wall Plaster																									
↓	83B	↓																									

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110915B-	84	Boiler Interior Fire Brick																									
	84B	↓																									
	84C	↓																									
	85	Fire Hose																									
	85B	↓																									
	85C	↓																									

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110915B-	86	Brick Mortar																									
	86B																										
	86C																										
	87	Fiberglass pipe insulation paper																									
	87B																										
	87C																										

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110915B-	88	Fiber board																									
	88B	↓																									
	88C	↓																									
	89	Floor paper																									
	89B	↓																									
↓	89C	↓																									

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1109153-	90	Fiberglass pipe insulation paper																									
	90B	↓																									
	90C	↓																									
	91	Joint Compound																									
	91B	↓																									
↓	91C	↓																									

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*	110915B-	92	Joint tape																									
*		92B	↓																									
*		92C	↓																									
		93	Brick Mortar																									
		93B	↓																									
	↓	93C	↓																									

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Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	94	Fire Brick																									
	94B	↓																									
	94C	↓																									
	95	Electric Wire Insulation																									
	95B	↓																									
↓	96	↓																									

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.
Lab Sample IDs: To form a lab sample id use Batch # - Sample ID.

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days (4-5 Days) Other _____; TAT in bus. days - lab approval required for rush analysis

PASI Batch #

Client: GZA GeoEnvironmental, Inc.
Address: 5 Commerce Park North Suite 201, Bedford, NH 03110
Project #: 04.0045441.02 PO: 8629
Project Site: 104 East Main Street, Vernon Rockville, CT
Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J Bft Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	96B	Electric Wire Insulation																									
	97B																										
	97B																										
	98																										
	98B																										
	99																										

Circle Type

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ver 4.2 Updated 8/10/11

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Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915 B-	99B	Electric Wire Insulation																									
	100																										
	100B																										
	101																										
	101B																										
↓	102	↓																									

Circle Type

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Relinquished By: Jeremy Bovich Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results: (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

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110915B-	102B	Electric Wire Insulation																									
	103																										
	103B																										
	104																										
	104B																										
	105																										

Circle Type

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: J BA Jeremy Boucher Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%) Circle Type: Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	105B	Electric Wire Insulation																									
	106																										
	106B																										
	107																										
	107B																										
	108																										

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TAT (circle one)
3 Hours 6 Hours Same Day Next Day
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PLM
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Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	108B	Electric Wire Insulation																									
	109																										
	109B																										
	110																										
	110B																										
	111																										

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PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: Jeremy Bouchard Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date: QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-	111B	Electric Wire Insulation																									
	112																										
	112B																										
	113																										
	113B																										
↓	114	↓																									

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110915B-1	114B	Electric Wire Insulation																									
	115																										
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	116																										
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	117																										

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Contact: Stephen Raymond
Tel. / Fax #: (603) 494-4189
Email: stephen.raymond@gza.com

PLM
Chain of Custody
ver 4.2 Updated 8/10/11

Relinquished By: JBT Jeremy Boucher Date: 11/12/15
Received By: Date:
# of Samples Received: Analyzed:
Results (email) fax verbal By: Date:
Stop on first positive: (Yes) / No
Special Instructions:

Analyst / Date:
QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
110915B-1	17B	Electric Wire Insulation																									

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CERTIFICATE OF ANALYSIS

Stephen Raymond
GZA GeoEnvironmental, Inc.
5 Commerce Park North
Bedford, NH 03110

RE: Amerbelle (05.0045441.00)
ESS Laboratory Work Order Number: 1509328

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 8:49 am, Oct 01, 2015

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

SAMPLE RECEIPT

The following samples were received on September 14, 2015 for the analyses specified on the enclosed Chain of Custody Record.

To achieve Reasonable Confidence Protocols (RCP) compliance for Connecticut data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All RCP requirements have been achieved unless noted in the project narrative.

Question 5: **Each method has been set-up in the laboratory to reach required RCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes (ie for GWPC samples, 1,2-Dibromoethane regulatory levels will not be met by VOA 8260. If this is a contaminant of concern Method 8011 will need to be used.). The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.**

Question 6: All samples for Metals were analyzed for a subset of the required RCP list per the client's request.

Revision 1 October 1, 2015: This report has been revised to include Matrix change and revised cooler receipt.

Lab Number	Sample Name	Matrix	Analysis
1509328-01	14-Foundation-1	Solid	6010C, 8082
1509328-02	14-S Wall-1	Solid	6010C, 8082
1509328-03	14-N Wall-1	Solid	6010C, 8082
1509328-04	14-E-W Wall-1	Solid	6010C, 8082
1509328-05	14-Wood-1	Solid	6010C, 8082
1509328-06	14-Floor Slab-1	Solid	6010C, 8082
1509328-07	8-Masonry-Concrete-1	Solid	6010C, 8082
1509328-08	8-Wood-1	Solid	6010C, 8082
1509328-09	7-Masonry-Concrete-1	Solid	6010C, 8082
1509328-10	13-Masonry-Concrete-1	Solid	6010C, 8082
1509328-11	2-Masonry-Concrete-1	Solid	6010C, 8082
1509328-12	Shed-Concrete-1	Solid	6010C, 8082
1509328-13	2-7-Wood-1	Solid	6010C, 8082
1509328-14	PCB-14-1	Solid	8082
1509328-15	PCB-14-2	Solid	8082
1509328-16	PCB-14-3	Solid	8082
1509328-17	PCB-14-4	Solid	8082
1509328-18	PCB-13-1	Solid	8082
1509328-19	PCB-7-1	Solid	8082

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1509328-06	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl [2C] (211% @ 30-150%)
1509328-09	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl (285% @ 30-150%)
1509328-13	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl (272% @ 30-150%)
1509328-14	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl (181% @ 30-150%)
1509328-15	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl [2C] (982% @ 30-150%)
1509328-15	**Surrogate recovery(ies) below lower control limit (S-).**
	Tetrachloro-m-xylene [2C] (27% @ 30-150%)
1509328-16	**Lower value is used due to matrix interferences (LC).**
	Aroclor 1254
1509328-16	**Percent difference between primary and confirmation results exceeds 40% (P).**
	Aroclor 1254
1509328-16	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl [2C] (521% @ 30-150%)
1509328-17	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl (412% @ 30-150%)
1509328-19	**Surrogate recovery(ies) above upper control limit (S+).**
	Decachlorobiphenyl (224% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Laboratory Analysis
QA/QC Certification Form

Project Number: **05.0045441.00**
Sampling Date(s): **9/10/2015**
Laboratory Sample ID(s): **1509328-01 through 1509328-19**

List RCP Methods Used	( ) 8260B	( ) 8151A	( ) ETPH	(X) 6010B	( ) 7470A/1A
Other: _____	( ) 8270C	( ) 8081A	( ) VPH	( ) 6020	( ) 9014M
_____	(X) 8082	( ) 8021B	( ) EPH	( ) 7000 S	( ) 7196A

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria failing outside of acceptable guidelines, as specified in the CTDEP method-specific Reasonable Confidence Protocol documents?	Yes (X) No ( )
1A	Were the method specified preservation and holding time requirements met?	Yes (X) No ( )
1B	***VPH and EPH Methods only:*** Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective RCP methods)?	Yes ( ) No ( ) N/A (X)
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	Yes (X) No ( )
3	Were samples received at an appropriate temperature (<6º Cº)?	Yes (X) No ( ) N/A ( )
4	Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?	Yes ( ) No (X)
5	a) Were reporting limits specified or referenced on the chain-of-custody? b) Were these reporting limits met?	Yes (X) No ( ) Yes (X) No ( )
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	Yes ( ) No (X)
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	Yes ( ) No (X)

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence." This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Laurel Stoddard Position: Laboratory Director

Printed Name: Laurel Stoddard Date: September 21, 2015

Name of Laboratory: ESS Laboratory

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Foundation-1
Date Sampled: 09/10/15 09:05
Percent Solids: 99

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-01
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.48)		6010C		1	KJK	09/17/15 17:09	2.08	100	CI51636
Chromium	**5.82** (0.97)		6010C		1	KJK	09/17/15 17:09	2.08	100	CI51636
Lead	ND (4.84)		6010C		1	KJK	09/17/15 17:09	2.08	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Foundation-1
Date Sampled: 09/10/15 09:05
Percent Solids: 99
Initial Volume: 10.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-01
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1221	ND (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1232	ND (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1242	ND (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1248	ND (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1254	**0.170** (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1260	ND (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1262	ND (0.0996)		8082		1	09/16/15 19:36		CI51408
Aroclor 1268	ND (0.0996)		8082		1	09/16/15 19:36		CI51408

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-S Wall-1
Date Sampled: 09/10/15 09:25
Percent Solids: 100

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-02
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.49)		6010C		1	KJK	09/17/15 17:15	2.04	100	CI51636
Chromium	**8.66** (0.98)		6010C		1	KJK	09/17/15 17:15	2.04	100	CI51636
Lead	**17.6** (4.92)		6010C		1	KJK	09/17/15 17:15	2.04	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-S Wall-1
Date Sampled: 09/10/15 09:25
Percent Solids: 100
Initial Volume: 10.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-02
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1221	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1232	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1242	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1248	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1254	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1260	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1262	ND (0.0994)		8082		1	09/16/15 19:55		CI51408
Aroclor 1268	ND (0.0994)		8082		1	09/16/15 19:55		CI51408

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*119 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*92 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*85 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-N Wall-1
Date Sampled: 09/10/15 09:40
Percent Solids: 99

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-03
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.50)		6010C		1	KJK	09/17/15 17:19	2.01	100	CI51636
Chromium	**10.4** (1.00)		6010C		1	KJK	09/17/15 17:19	2.01	100	CI51636
Lead	**21.1** (5.00)		6010C		1	KJK	09/17/15 17:19	2.01	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-N Wall-1
Date Sampled: 09/10/15 09:40
Percent Solids: 99
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-03
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.101)		8082		1	09/16/15 20:14		CI51408
Aroclor 1221	ND (0.101)		8082		1	09/16/15 20:14		CI51408
Aroclor 1232	ND (0.101)		8082		1	09/16/15 20:14		CI51408
Aroclor 1242	ND (0.101)		8082		1	09/16/15 20:14		CI51408
Aroclor 1248	ND (0.101)		8082		1	09/16/15 20:14		CI51408
Aroclor 1254	**8.15** (1.01)		8082		10	09/17/15 16:34		CI51408
Aroclor 1260	ND (0.101)		8082		1	09/16/15 20:14		CI51408
Aroclor 1262	ND (0.101)		8082		1	09/16/15 20:14		CI51408
Aroclor 1268	ND (0.101)		8082		1	09/16/15 20:14		CI51408

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*137 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*88 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-E-W Wall-1
Date Sampled: 09/10/15 09:50
Percent Solids: 99

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-04
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.49)		6010C		1	KJK	09/17/15 17:25	2.07	100	CI51636
Chromium	**14.3** (0.97)		6010C		1	KJK	09/17/15 17:25	2.07	100	CI51636
Lead	**42.7** (4.87)		6010C		1	KJK	09/17/15 17:25	2.07	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-E-W Wall-1
Date Sampled: 09/10/15 09:50
Percent Solids: 99
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-04
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.101)		8082		1	09/16/15 20:33		CI51408
Aroclor 1221	ND (0.101)		8082		1	09/16/15 20:33		CI51408
Aroclor 1232	ND (0.101)		8082		1	09/16/15 20:33		CI51408
Aroclor 1242	ND (0.101)		8082		1	09/16/15 20:33		CI51408
Aroclor 1248	ND (0.101)		8082		1	09/16/15 20:33		CI51408
Aroclor 1254	**3.26** (0.504)		8082		5	09/17/15 16:53		CI51408
Aroclor 1260	ND (0.101)		8082		1	09/16/15 20:33		CI51408
Aroclor 1262	ND (0.101)		8082		1	09/16/15 20:33		CI51408
Aroclor 1268	ND (0.101)		8082		1	09/16/15 20:33		CI51408

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*125 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*90 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Wood-1
Date Sampled: 09/10/15 10:05
Percent Solids: 93

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-05
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	**0.68** (0.53)		6010C		1	KJK	09/17/15 17:30	2.02	100	CI51636
Chromium	**42.6** (1.07)		6010C		1	KJK	09/17/15 17:30	2.02	100	CI51636
Lead	ND (5.34)		6010C		1	KJK	09/17/15 17:30	2.02	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Wood-1
Date Sampled: 09/10/15 10:05
Percent Solids: 93
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-05
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1221	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1232	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1242	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1248	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1254	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1260	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1262	ND (0.108)		8082		1	09/16/15 20:51		CI51408
Aroclor 1268	ND (0.108)		8082		1	09/16/15 20:51		CI51408

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*85 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*59 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Floor Slab-1
Date Sampled: 09/10/15 10:25
Percent Solids: 99

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-06
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.49)		6010C		1	KJK	09/17/15 17:35	2.05	100	CI51636
Chromium	**12.0** (0.99)		6010C		1	KJK	09/17/15 17:35	2.05	100	CI51636
Lead	**7.63** (4.93)		6010C		1	KJK	09/17/15 17:35	2.05	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Floor Slab-1
Date Sampled: 09/10/15 10:25
Percent Solids: 99
Initial Volume: 10.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-06
Sample Matrix: Solid
Units: mg/kg dry
Analyst: TJ
Prepared: 9/17/15 18:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1221	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1232	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1242	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1248	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1254	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1260	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1262	ND (0.100)		8082		1	09/19/15 9:58		CI51722
Aroclor 1268	ND (0.100)		8082		1	09/19/15 9:58		CI51722

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*54 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*211 %*	*S+*	*30-150*
Surrogate: Tetrachloro-m-xylene	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*43 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 8-Masonry-Concrete-1
Date Sampled: 09/10/15 12:05
Percent Solids: 100

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-07
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.48)		6010C		1	KJK	09/17/15 17:53	2.11	100	CI51636
Chromium	**24.7** (0.95)		6010C		1	KJK	09/17/15 17:53	2.11	100	CI51636
Lead	**7.84** (4.76)		6010C		1	KJK	09/17/15 17:53	2.11	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 8-Masonry-Concrete-1
Date Sampled: 09/10/15 12:05
Percent Solids: 100
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-07
Sample Matrix: Solid
Units: mg/kg dry
Analyst: TJ
Prepared: 9/17/15 18:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1221	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1232	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1242	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1248	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1254	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1260	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1262	ND (0.100)		8082		1	09/19/15 10:17		CI51722
Aroclor 1268	ND (0.100)		8082		1	09/19/15 10:17		CI51722

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*109 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 8-Wood-1
Date Sampled: 09/10/15 12:25
Percent Solids: 91

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-08
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.53)		6010C		1	KJK	09/17/15 17:57	2.08	100	CI51636
Chromium	ND (1.05)		6010C		1	KJK	09/17/15 17:57	2.08	100	CI51636
Lead	**7.93** (5.27)		6010C		1	KJK	09/17/15 17:57	2.08	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 8-Wood-1
Date Sampled: 09/10/15 12:25
Percent Solids: 91
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-08
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1221	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1232	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1242	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1248	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1254	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1260	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1262	ND (0.110)		8082		1	09/16/15 21:48		CI51408
Aroclor 1268	ND (0.110)		8082		1	09/16/15 21:48		CI51408

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*114 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 7-Masonry-Concrete-1
Date Sampled: 09/10/15 12:40
Percent Solids: 99

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-09
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.45)		6010C		1	KJK	09/17/15 18:02	2.24	100	CI51636
Chromium	**8.35** (0.90)		6010C		1	KJK	09/17/15 18:02	2.24	100	CI51636
Lead	**7.52** (4.49)		6010C		1	KJK	09/17/15 18:02	2.24	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 7-Masonry-Concrete-1
Date Sampled: 09/10/15 12:40
Percent Solids: 99
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-09
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1221	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1232	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1242	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1248	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1254	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1260	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1262	ND (0.101)		8082		1	09/16/15 22:07		CI51408
Aroclor 1268	ND (0.101)		8082		1	09/16/15 22:07		CI51408

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*285 %*	*S+*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*110 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*96 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 13-Masonry-Concrete-1
Date Sampled: 09/10/15 13:00
Percent Solids: 99

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-10
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.49)		6010C		1	KJK	09/17/15 18:28	2.04	100	CI51636
Chromium	**6.65** (0.99)		6010C		1	KJK	09/17/15 18:28	2.04	100	CI51636
Lead	ND (4.93)		6010C		1	KJK	09/17/15 18:28	2.04	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 13-Masonry-Concrete-1
Date Sampled: 09/10/15 13:00
Percent Solids: 99
Initial Volume: 10.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-10
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1221	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1232	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1242	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1248	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1254	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1260	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1262	ND (0.0997)		8082		1	09/16/15 22:26		CI51408
Aroclor 1268	ND (0.0997)		8082		1	09/16/15 22:26		CI51408

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*101 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*67 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 2-Masonry-Concrete-1
Date Sampled: 09/10/15 13:40
Percent Solids: 99

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-11
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.48)		6010C		1	KJK	09/17/15 18:33	2.1	100	CI51636
Chromium	**4.76** (0.96)		6010C		1	KJK	09/17/15 18:33	2.1	100	CI51636
Lead	ND (4.79)		6010C		1	KJK	09/17/15 18:33	2.1	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 2-Masonry-Concrete-1
Date Sampled: 09/10/15 13:40
Percent Solids: 99
Initial Volume: 10.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-11
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1221	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1232	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1242	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1248	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1254	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1260	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1262	ND (0.0995)		8082		1	09/16/15 22:45		CI51408
Aroclor 1268	ND (0.0995)		8082		1	09/16/15 22:45		CI51408

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*148 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*87 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: Shed-Concrete-1
Date Sampled: 09/10/15 14:25
Percent Solids: 96

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-12
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.51)		6010C		1	KJK	09/17/15 18:39	2.03	100	CI51636
Chromium	**11.1** (1.02)		6010C		1	KJK	09/17/15 18:39	2.03	100	CI51636
Lead	ND (5.12)		6010C		1	KJK	09/17/15 18:39	2.03	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: Shed-Concrete-1
Date Sampled: 09/10/15 14:25
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-12
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1221	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1232	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1242	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1248	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1254	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1260	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1262	ND (0.102)		8082		1	09/16/15 23:03		CI51408
Aroclor 1268	ND (0.102)		8082		1	09/16/15 23:03		CI51408

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*64 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*58 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 2-7-Wood-1
Date Sampled: 09/10/15 14:10
Percent Solids: 96

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-13
Sample Matrix: Solid
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Cadmium	ND (0.48)		6010C		1	KJK	09/17/15 18:57	2.18	100	CI51636
Chromium	**1.19** (0.96)		6010C		1	KJK	09/17/15 18:57	2.18	100	CI51636
Lead	**23.4** (4.78)		6010C		1	KJK	09/17/15 18:57	2.18	100	CI51636

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 2-7-Wood-1
Date Sampled: 09/10/15 14:10
Percent Solids: 96
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-13
Sample Matrix: Solid
Units: mg/kg dry
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1221	ND (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1232	ND (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1242	ND (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1248	ND (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1254	**0.155** (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1260	ND (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1262	ND (0.104)		8082		1	09/16/15 23:22		CI51408
Aroclor 1268	ND (0.104)		8082		1	09/16/15 23:22		CI51408

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*272 %*	*S+*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*63 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: PCB-14-1
Date Sampled: 09/10/15 10:42
Percent Solids: N/A
Initial Volume: 5.11
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-14
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JXS
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1221	ND (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1232	ND (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1242	**0.789** (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1248	ND (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1254	**0.338** (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1260	ND (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1262	ND (0.196)		8082		1	09/16/15 23:41		CI51408
Aroclor 1268	ND (0.196)		8082		1	09/16/15 23:41		CI51408

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*181 %*	*S+*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: PCB-14-2
Date Sampled: 09/10/15 10:47
Percent Solids: N/A
Initial Volume: 5.02
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-15
Sample Matrix: Solid
Units: mg/kg wet
Analyst: TJ
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1221	ND (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1232	ND (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1242	**1.36** (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1248	ND (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1254	**1.58** (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1260	ND (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1262	ND (0.398)		8082		2	09/17/15 19:07		CI52105
Aroclor 1268	ND (0.398)		8082		2	09/17/15 19:07		CI52105

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*69 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*982 %*	*S+*	*30-150*
Surrogate: Tetrachloro-m-xylene	*39 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*27 %*	*S-*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: PCB-14-3
Date Sampled: 09/10/15 11:09
Percent Solids: N/A
Initial Volume: 5.06
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-16
Sample Matrix: Solid
Units: mg/kg wet
Analyst: TJ
Prepared: 9/14/15 18:45

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1221	ND (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1232	ND (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1242	ND (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1248	ND (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1254	**LC, P 0.362** (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1260	ND (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1262	ND (0.198)		8082		1	09/17/15 19:26		CI52105
Aroclor 1268	ND (0.198)		8082		1	09/17/15 19:26		CI52105

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*63 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*521 %*	*S+*	*30-150*
Surrogate: Tetrachloro-m-xylene	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*39 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: PCB-14-4
Date Sampled: 09/10/15 11:21
Percent Solids: N/A
Initial Volume: 5.18
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-17
Sample Matrix: Solid
Units: mg/kg wet
Analyst: TJ
Prepared: 9/15/15 18:30

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1221	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1232	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1242	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1248	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1254	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1260	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1262	ND (0.193)		8082		1	09/17/15 0:19		CI51529
Aroclor 1268	ND (0.193)		8082		1	09/17/15 0:19		CI51529

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*412 %*	*S+*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: PCB-13-1
Date Sampled: 09/10/15 14:53
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-18
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JXS
Prepared: 9/15/15 18:30

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1221	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1232	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1242	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1248	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1254	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1260	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1262	ND (0.200)		8082		1	09/17/15 0:38		CI51529
Aroclor 1268	ND (0.200)		8082		1	09/17/15 0:38		CI51529

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*97 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*36 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: PCB-7-1
Date Sampled: 09/10/15 15:18
Percent Solids: N/A
Initial Volume: 5.07
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1509328
ESS Laboratory Sample ID: 1509328-19
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JXS
Prepared: 9/15/15 18:30

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1221	ND (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1232	ND (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1242	ND (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1248	ND (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1254	**0.463** (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1260	ND (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1262	ND (0.197)		8082		1	09/17/15 0:56		CI51529
Aroclor 1268	ND (0.197)		8082		1	09/17/15 0:56		CI51529

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*224 %*	*S+*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CI51636 - 3005A										
Blank										
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
LCS										
Cadmium	101	1.85	mg/kg wet	123.0		82	80-120			
Chromium	53.5	3.70	mg/kg wet	63.20		85	80-120			
Lead	95.8	18.5	mg/kg wet	108.0		89	80-120			
LCS Dup										
Cadmium	99.1	1.85	mg/kg wet	123.0		81	80-120	2	20	
Chromium	53.0	3.70	mg/kg wet	63.20		84	80-120	0.9	20	
Lead	95.1	18.5	mg/kg wet	108.0		88	80-120	0.6	20	
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51408 - 3540C										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1016 (1)	ND	0.0500	mg/kg wet							
Aroclor 1016 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (2)	ND	0.0500	mg/kg wet							
Aroclor 1016 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (3)	ND	0.0500	mg/kg wet							
Aroclor 1016 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (4)	ND	0.0500	mg/kg wet							
Aroclor 1016 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (5)	ND	0.0500	mg/kg wet							
Aroclor 1016 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1221 (1)	ND	0.0500	mg/kg wet							
Aroclor 1221 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (2)	ND	0.0500	mg/kg wet							
Aroclor 1221 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (3)	ND	0.0500	mg/kg wet							
Aroclor 1221 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (4)	ND	0.0500	mg/kg wet							
Aroclor 1221 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (5)	ND	0.0500	mg/kg wet							
Aroclor 1221 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1232 (1)	ND	0.0500	mg/kg wet							
Aroclor 1232 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (2)	ND	0.0500	mg/kg wet							
Aroclor 1232 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (3)	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51408 - 3540C										
Aroclor 1232 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (4)	ND	0.0500	mg/kg wet							
Aroclor 1232 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (5)	ND	0.0500	mg/kg wet							
Aroclor 1232 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1242 (1)	ND	0.0500	mg/kg wet							
Aroclor 1242 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (2)	ND	0.0500	mg/kg wet							
Aroclor 1242 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (3)	ND	0.0500	mg/kg wet							
Aroclor 1242 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (4)	ND	0.0500	mg/kg wet							
Aroclor 1242 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (5)	ND	0.0500	mg/kg wet							
Aroclor 1242 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1248 (1)	ND	0.0500	mg/kg wet							
Aroclor 1248 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (2)	ND	0.0500	mg/kg wet							
Aroclor 1248 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (3)	ND	0.0500	mg/kg wet							
Aroclor 1248 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (4)	ND	0.0500	mg/kg wet							
Aroclor 1248 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (5)	ND	0.0500	mg/kg wet							
Aroclor 1248 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1254 (1)	ND	0.0500	mg/kg wet							
Aroclor 1254 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (2)	ND	0.0500	mg/kg wet							
Aroclor 1254 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (3)	ND	0.0500	mg/kg wet							
Aroclor 1254 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (4)	ND	0.0500	mg/kg wet							
Aroclor 1254 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (5)	ND	0.0500	mg/kg wet							
Aroclor 1254 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1260 (1)	ND	0.0500	mg/kg wet							
Aroclor 1260 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (2)	ND	0.0500	mg/kg wet							
Aroclor 1260 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (3)	ND	0.0500	mg/kg wet							
Aroclor 1260 (3) [2C]	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51408 - 3540C										
Aroclor 1260 (4)	ND	0.0500	mg/kg wet							
Aroclor 1260 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (5)	ND	0.0500	mg/kg wet							
Aroclor 1260 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1262 (1)	ND	0.0500	mg/kg wet							
Aroclor 1262 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (2)	ND	0.0500	mg/kg wet							
Aroclor 1262 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (3)	ND	0.0500	mg/kg wet							
Aroclor 1262 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (4)	ND	0.0500	mg/kg wet							
Aroclor 1262 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (5)	ND	0.0500	mg/kg wet							
Aroclor 1262 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Aroclor 1268 (1)	ND	0.0500	mg/kg wet							
Aroclor 1268 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (2)	ND	0.0500	mg/kg wet							
Aroclor 1268 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (3)	ND	0.0500	mg/kg wet							
Aroclor 1268 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (4)	ND	0.0500	mg/kg wet							
Aroclor 1268 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (5)	ND	0.0500	mg/kg wet							
Aroclor 1268 (5) [2C]	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0115*		mg/kg wet	*0.02500*		*46*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0106*		mg/kg wet	*0.02500*		*42*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0211*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0189*		mg/kg wet	*0.02500*		*75*	*30-150*			
LCS										
Aroclor 1016	0.455	0.0500	mg/kg wet	0.5000		91	40-140			
Aroclor 1260	0.356	0.0500	mg/kg wet	0.5000		71	40-140			
Surrogate: Decachlorobiphenyl	*0.0139*		mg/kg wet	*0.02500*		*56*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0134*		mg/kg wet	*0.02500*		*53*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0229*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0221*		mg/kg wet	*0.02500*		*88*	*30-150*			
LCS Dup										
Aroclor 1016	0.461	0.0500	mg/kg wet	0.5000		92	40-140	1	50	
Aroclor 1260	0.376	0.0500	mg/kg wet	0.5000		75	40-140	5	50	
Surrogate: Decachlorobiphenyl	*0.0143*		mg/kg wet	*0.02500*		*57*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0139*		mg/kg wet	*0.02500*		*55*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0238*		mg/kg wet	*0.02500*		*95*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51408 - 3540C										
Surrogate: Tetrachloro-m-xylene [2C]	*0.0221*		mg/kg wet	*0.02500*		*89*	*30-150*			
Batch CI51529 - 3540C										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1016 (1)	ND	0.0500	mg/kg wet							
Aroclor 1016 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (2)	ND	0.0500	mg/kg wet							
Aroclor 1016 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (3)	ND	0.0500	mg/kg wet							
Aroclor 1016 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (4)	ND	0.0500	mg/kg wet							
Aroclor 1016 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (5)	ND	0.0500	mg/kg wet							
Aroclor 1016 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1221 (1)	ND	0.0500	mg/kg wet							
Aroclor 1221 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (2)	ND	0.0500	mg/kg wet							
Aroclor 1221 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (3)	ND	0.0500	mg/kg wet							
Aroclor 1221 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (4)	ND	0.0500	mg/kg wet							
Aroclor 1221 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (5)	ND	0.0500	mg/kg wet							
Aroclor 1221 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1232 (1)	ND	0.0500	mg/kg wet							
Aroclor 1232 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (2)	ND	0.0500	mg/kg wet							
Aroclor 1232 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (3)	ND	0.0500	mg/kg wet							
Aroclor 1232 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (4)	ND	0.0500	mg/kg wet							
Aroclor 1232 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (5)	ND	0.0500	mg/kg wet							
Aroclor 1232 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1242 (1)	ND	0.0500	mg/kg wet							
Aroclor 1242 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (2)	ND	0.0500	mg/kg wet							
Aroclor 1242 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (3)	ND	0.0500	mg/kg wet							
Aroclor 1242 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (4)	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51529 - 3540C										
Aroclor 1242 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (5)	ND	0.0500	mg/kg wet							
Aroclor 1242 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1248 (1)	ND	0.0500	mg/kg wet							
Aroclor 1248 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (2)	ND	0.0500	mg/kg wet							
Aroclor 1248 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (3)	ND	0.0500	mg/kg wet							
Aroclor 1248 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (4)	ND	0.0500	mg/kg wet							
Aroclor 1248 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (5)	ND	0.0500	mg/kg wet							
Aroclor 1248 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1254 (1)	ND	0.0500	mg/kg wet							
Aroclor 1254 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (2)	ND	0.0500	mg/kg wet							
Aroclor 1254 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (3)	ND	0.0500	mg/kg wet							
Aroclor 1254 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (4)	ND	0.0500	mg/kg wet							
Aroclor 1254 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (5)	ND	0.0500	mg/kg wet							
Aroclor 1254 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1260 (1)	ND	0.0500	mg/kg wet							
Aroclor 1260 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (2)	ND	0.0500	mg/kg wet							
Aroclor 1260 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (3)	ND	0.0500	mg/kg wet							
Aroclor 1260 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (4)	ND	0.0500	mg/kg wet							
Aroclor 1260 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (5)	ND	0.0500	mg/kg wet							
Aroclor 1260 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1262 (1)	ND	0.0500	mg/kg wet							
Aroclor 1262 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (2)	ND	0.0500	mg/kg wet							
Aroclor 1262 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (3)	ND	0.0500	mg/kg wet							
Aroclor 1262 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (4)	ND	0.0500	mg/kg wet							
Aroclor 1262 (4) [2C]	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

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Quality Control Data

8082 Polychlorinated Biphenyls (PCB)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CI51529 - 3540C										
Aroclor 1262 (5)	ND	0.0500	mg/kg wet							
Aroclor 1262 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Aroclor 1268 (1)	ND	0.0500	mg/kg wet							
Aroclor 1268 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (2)	ND	0.0500	mg/kg wet							
Aroclor 1268 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (3)	ND	0.0500	mg/kg wet							
Aroclor 1268 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (4)	ND	0.0500	mg/kg wet							
Aroclor 1268 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (5)	ND	0.0500	mg/kg wet							
Aroclor 1268 (5) [2C]	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0208*		mg/kg wet	*0.02500*		*83*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0211*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0199*		mg/kg wet	*0.02500*		*80*	*30-150*			
LCS										
Aroclor 1016	0.449	0.0500	mg/kg wet	0.5000		90	40-140			
Aroclor 1260	0.464	0.0500	mg/kg wet	0.5000		93	40-140			
Surrogate: Decachlorobiphenyl	*0.0240*		mg/kg wet	*0.02500*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0248*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0224*		mg/kg wet	*0.02500*		*90*	*30-150*			
LCS Dup										
Aroclor 1016	0.437	0.0500	mg/kg wet	0.5000		87	40-140	3	50	
Aroclor 1260	0.460	0.0500	mg/kg wet	0.5000		92	40-140	1	50	
Surrogate: Decachlorobiphenyl	*0.0227*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0226*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0220*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0216*		mg/kg wet	*0.02500*		*87*	*30-150*			
Batch CI51722 - 3540C										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1016 (1)	ND	0.0500	mg/kg wet							
Aroclor 1016 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (2)	ND	0.0500	mg/kg wet							
Aroclor 1016 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (3)	ND	0.0500	mg/kg wet							
Aroclor 1016 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (4)	ND	0.0500	mg/kg wet							
Aroclor 1016 (4) [2C]	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51722 - 3540C										
Aroclor 1016 (5)	ND	0.0500	mg/kg wet							
Aroclor 1016 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1221 (1)	ND	0.0500	mg/kg wet							
Aroclor 1221 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (2)	ND	0.0500	mg/kg wet							
Aroclor 1221 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (3)	ND	0.0500	mg/kg wet							
Aroclor 1221 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (4)	ND	0.0500	mg/kg wet							
Aroclor 1221 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (5)	ND	0.0500	mg/kg wet							
Aroclor 1221 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1232 (1)	ND	0.0500	mg/kg wet							
Aroclor 1232 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (2)	ND	0.0500	mg/kg wet							
Aroclor 1232 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (3)	ND	0.0500	mg/kg wet							
Aroclor 1232 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (4)	ND	0.0500	mg/kg wet							
Aroclor 1232 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (5)	ND	0.0500	mg/kg wet							
Aroclor 1232 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1242 (1)	ND	0.0500	mg/kg wet							
Aroclor 1242 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (2)	ND	0.0500	mg/kg wet							
Aroclor 1242 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (3)	ND	0.0500	mg/kg wet							
Aroclor 1242 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (4)	ND	0.0500	mg/kg wet							
Aroclor 1242 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (5)	ND	0.0500	mg/kg wet							
Aroclor 1242 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1248 (1)	ND	0.0500	mg/kg wet							
Aroclor 1248 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (2)	ND	0.0500	mg/kg wet							
Aroclor 1248 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (3)	ND	0.0500	mg/kg wet							
Aroclor 1248 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (4)	ND	0.0500	mg/kg wet							
Aroclor 1248 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (5)	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51722 - 3540C										
Aroclor 1248 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1254 (1)	ND	0.0500	mg/kg wet							
Aroclor 1254 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (2)	ND	0.0500	mg/kg wet							
Aroclor 1254 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (3)	ND	0.0500	mg/kg wet							
Aroclor 1254 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (4)	ND	0.0500	mg/kg wet							
Aroclor 1254 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (5)	ND	0.0500	mg/kg wet							
Aroclor 1254 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1260 (1)	ND	0.0500	mg/kg wet							
Aroclor 1260 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (2)	ND	0.0500	mg/kg wet							
Aroclor 1260 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (3)	ND	0.0500	mg/kg wet							
Aroclor 1260 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (4)	ND	0.0500	mg/kg wet							
Aroclor 1260 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (5)	ND	0.0500	mg/kg wet							
Aroclor 1260 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1262 (1)	ND	0.0500	mg/kg wet							
Aroclor 1262 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (2)	ND	0.0500	mg/kg wet							
Aroclor 1262 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (3)	ND	0.0500	mg/kg wet							
Aroclor 1262 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (4)	ND	0.0500	mg/kg wet							
Aroclor 1262 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (5)	ND	0.0500	mg/kg wet							
Aroclor 1262 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Aroclor 1268 (1)	ND	0.0500	mg/kg wet							
Aroclor 1268 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (2)	ND	0.0500	mg/kg wet							
Aroclor 1268 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (3)	ND	0.0500	mg/kg wet							
Aroclor 1268 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (4)	ND	0.0500	mg/kg wet							
Aroclor 1268 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (5)	ND	0.0500	mg/kg wet							
Aroclor 1268 (5) [2C]	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI51722 - 3540C										
Surrogate: Decachlorobiphenyl	*0.0252*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0189*		mg/kg wet	*0.02500*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0198*		mg/kg wet	*0.02500*		*79*	*30-150*			
LCS										
Aroclor 1016	0.473	0.0500	mg/kg wet	0.5000		95	40-140			
Aroclor 1260	0.460	0.0500	mg/kg wet	0.5000		92	40-140			
Surrogate: Decachlorobiphenyl	*0.0257*		mg/kg wet	*0.02500*		*103*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0249*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
LCS Dup										
Aroclor 1016	0.470	0.0500	mg/kg wet	0.5000		94	40-140	0.7	50	
Aroclor 1260	0.461	0.0500	mg/kg wet	0.5000		92	40-140	0.06	50	
Surrogate: Decachlorobiphenyl	*0.0256*		mg/kg wet	*0.02500*		*103*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0200*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0202*		mg/kg wet	*0.02500*		*81*	*30-150*			
Batch CI52105 - 3540C										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1016 (1)	ND	0.0500	mg/kg wet							
Aroclor 1016 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (2)	ND	0.0500	mg/kg wet							
Aroclor 1016 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (3)	ND	0.0500	mg/kg wet							
Aroclor 1016 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (4)	ND	0.0500	mg/kg wet							
Aroclor 1016 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (5)	ND	0.0500	mg/kg wet							
Aroclor 1016 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1221 (1)	ND	0.0500	mg/kg wet							
Aroclor 1221 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (2)	ND	0.0500	mg/kg wet							
Aroclor 1221 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (3)	ND	0.0500	mg/kg wet							
Aroclor 1221 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (4)	ND	0.0500	mg/kg wet							
Aroclor 1221 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (5)	ND	0.0500	mg/kg wet							
Aroclor 1221 (5) [2C]	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI52105 - 3540C										
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1232 (1)	ND	0.0500	mg/kg wet							
Aroclor 1232 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (2)	ND	0.0500	mg/kg wet							
Aroclor 1232 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (3)	ND	0.0500	mg/kg wet							
Aroclor 1232 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (4)	ND	0.0500	mg/kg wet							
Aroclor 1232 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (5)	ND	0.0500	mg/kg wet							
Aroclor 1232 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1242 (1)	ND	0.0500	mg/kg wet							
Aroclor 1242 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (2)	ND	0.0500	mg/kg wet							
Aroclor 1242 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (3)	ND	0.0500	mg/kg wet							
Aroclor 1242 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (4)	ND	0.0500	mg/kg wet							
Aroclor 1242 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (5)	ND	0.0500	mg/kg wet							
Aroclor 1242 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1248 (1)	ND	0.0500	mg/kg wet							
Aroclor 1248 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (2)	ND	0.0500	mg/kg wet							
Aroclor 1248 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (3)	ND	0.0500	mg/kg wet							
Aroclor 1248 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (4)	ND	0.0500	mg/kg wet							
Aroclor 1248 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (5)	ND	0.0500	mg/kg wet							
Aroclor 1248 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1254 (1)	ND	0.0500	mg/kg wet							
Aroclor 1254 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (2)	ND	0.0500	mg/kg wet							
Aroclor 1254 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (3)	ND	0.0500	mg/kg wet							
Aroclor 1254 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (4)	ND	0.0500	mg/kg wet							
Aroclor 1254 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (5)	ND	0.0500	mg/kg wet							
Aroclor 1254 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI52105 - 3540C										
Aroclor 1260 (1)	ND	0.0500	mg/kg wet							
Aroclor 1260 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (2)	ND	0.0500	mg/kg wet							
Aroclor 1260 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (3)	ND	0.0500	mg/kg wet							
Aroclor 1260 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (4)	ND	0.0500	mg/kg wet							
Aroclor 1260 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (5)	ND	0.0500	mg/kg wet							
Aroclor 1260 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1262 (1)	ND	0.0500	mg/kg wet							
Aroclor 1262 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (2)	ND	0.0500	mg/kg wet							
Aroclor 1262 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (3)	ND	0.0500	mg/kg wet							
Aroclor 1262 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (4)	ND	0.0500	mg/kg wet							
Aroclor 1262 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (5)	ND	0.0500	mg/kg wet							
Aroclor 1262 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Aroclor 1268 (1)	ND	0.0500	mg/kg wet							
Aroclor 1268 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (2)	ND	0.0500	mg/kg wet							
Aroclor 1268 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (3)	ND	0.0500	mg/kg wet							
Aroclor 1268 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (4)	ND	0.0500	mg/kg wet							
Aroclor 1268 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (5)	ND	0.0500	mg/kg wet							
Aroclor 1268 (5) [2C]	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0196*		mg/kg wet	*0.02500*		*78*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0190*		mg/kg wet	*0.02500*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0148*		mg/kg wet	*0.02500*		*59*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0121*		mg/kg wet	*0.02500*		*48*	*30-150*			
LCS										
Aroclor 1016	0.392	0.0500	mg/kg wet	0.5000		78	40-140			
Aroclor 1260	0.385	0.0500	mg/kg wet	0.5000		77	40-140			
Surrogate: Decachlorobiphenyl	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0211*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0156*		mg/kg wet	*0.02500*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0129*		mg/kg wet	*0.02500*		*51*	*30-150*			
LCS Dup										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CI52105 - 3540C										
Aroclor 1016	0.399	0.0500	mg/kg wet	0.5000		80	40-140	2	50	
Aroclor 1260	0.406	0.0500	mg/kg wet	0.5000		81	40-140	5	50	
Surrogate: Decachlorobiphenyl	*0.0220*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0174*		mg/kg wet	*0.02500*		*69*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0134*		mg/kg wet	*0.02500*		*53*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle ESS Laboratory Work Order: 1509328

Notes and Definitions

U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
S-	Surrogate recovery(ies) below lower control limit (S-).
P	Percent difference between primary and confirmation results exceeds 40% (P).
LC	Lower value is used due to matrix interferences (LC).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1509328

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc. NH
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 15090328
Date Project Due: 9/21/15
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact? Yes*	~~N/A~~	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **3.0**		16. Are ESS labels on correct containers?	Yes|No
Iced With: **Ice**		17. Were samples received intact?	Yes|No
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	

18. Was there need to call project manager to discuss status? If yes, please explain.

* Custody seal was removed by ESS courier to sign COC (cmt 9/30/15)

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	2	NP
2	Yes	4 oz Soil Jar	2	NP
3	Yes	4 oz Soil Jar	2	NP
4	Yes	4 oz Soil Jar	2	NP
5	Yes	4 oz Soil Jar	1	NP
5	Yes	8 oz Soil Jar	1	NP
6	Yes	4 oz Soil Jar	2	NP
7	Yes	4 oz Soil Jar	2	NP
8	Yes	4 oz Soil Jar	1	NP
8	Yes	8 oz Soil Jar	1	NP
9	Yes	4 oz Soil Jar	2	NP
10	Yes	4 oz Soil Jar	2	NP
11	Yes	4 oz Soil Jar	2	NP
12	Yes	4 oz Soil Jar	2	NP
13	Yes	4 oz Soil Jar	2	NP
14	Yes	2 oz Soil Jar	1	NP
15	Yes	2 oz Soil Jar	1	NP
16	Yes	2 oz Soil Jar	1	NP
17	Yes	2 oz Soil Jar	1	NP
18	Yes	2 oz Soil Jar	1	NP
19	Yes	2 oz Soil Jar	1	NP

Completed By: _____ Date/Time: 9/14/15 1850
Reviewed By: VAS Date/Time: 9/15/15 0835

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc. NH
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 15090328
Date Project Due: 9/21/15
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **3.0**		16. Are ESS labels on correct containers?	Yes/No
Iced With: **Ice**		17. Were samples received intact?	Yes/No
6. Was COC included with samples?	Yes	ESS Sample IDs: _____	
7. Was COC signed and dated by client?	Yes	Sub Lab: _____	
8. Does the COC match the sample	Yes	Analysis: _____	
9. Is COC complete and correct?	Yes	TAT: _____	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	2	NP
2	Yes	4 oz Soil Jar	2	NP
3	Yes	4 oz Soil Jar	2	NP
4	Yes	4 oz Soil Jar	2	NP
5	Yes	4 oz Soil Jar	1	NP
5	Yes	8 oz Soil Jar	1	NP
6	Yes	4 oz Soil Jar	2	NP
7	Yes	4 oz Soil Jar	2	NP
8	Yes	4 oz Soil Jar	1	NP
8	Yes	8 oz Soil Jar	1	NP
9	Yes	4 oz Soil Jar	2	NP
10	Yes	4 oz Soil Jar	2	NP
11	Yes	4 oz Soil Jar	2	NP
12	Yes	4 oz Soil Jar	2	NP
13	Yes	4 oz Soil Jar	2	NP
14	Yes	2 oz Soil Jar	1	NP
15	Yes	2 oz Soil Jar	1	NP
16	Yes	2 oz Soil Jar	1	NP
17	Yes	2 oz Soil Jar	1	NP
18	Yes	2 oz Soil Jar	1	NP
19	Yes	2 oz Soil Jar	1	NP

Completed By: _____ Date/Time: 9/14/15 1850
Reviewed By: _____ Date/Time: 9/15/15 0835

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1509328

Turn Time ___X___ Standard Other_____

Regulatory State: MA RI (CT) NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Reporting Limits - _____

Electonic Deliverables *Excel Access PDF

Co. Name	Project #	Project Name
GZA	05-0045441.00	Amerbelle

Contact Person	Proj. Location
Stephen Raymond	Vernon, CT

Address	City, State	Zip	PO #
5 Commerce Park North Suite 201	Bedford, NH	03110	

Tel. 603-232-8749 email: Stephen.Raymond@GZA.com

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: * Total Metal (Pb, Cd, Cr only)	Analysis: PCB 8082
1	9/10/15	0905	C	S	14-Foundation-1	1	2	AG	4oz	X	X
2	9/10/15	0925	C	S	14-S.Wall-1	1	2	AG	4oz	X	X
3	9/10/15	0940	C	S	14-N.Wall-1	1	2	AG	4oz	X	X
4	9/10/15	0950	C	S	14-E/W Wall-1	1	2	AG	4oz	X	X
5	9/10/15	1005	C	S	14-Wood-1	1	2	AG	8oz 4oz	X	X
6	9/10/15	1025	C	S	14-Floor Slab-1	1	2	AG	4oz	X	X
7	9/10/15	1205	C	S	8-Masonry/Concrete-1	1	2	AG	4oz	X	X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: 3.0 IR 9-14-15 17:06

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by : Stephen Raymond + Rebecca Cox

Comments: * TCLP 20x rule for Metals. Please call PM.

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
9/11/15 1550	Custody Seal - GZA fridge 9/11/15 1550	GZA Fridge 9-14-15 12:40	9/14/15 3.5°C
9-14-15 17:06	9/14/15 1840		

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1508328

Turn Time X Standard Other_____

Regulatory State: MA RI (CT) NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Reporting Limits - _____

Electonic Deliverables *Excel Access PDF

Co. Name: GZA	Project #: 05-0045441.00	Project Name: Amerbelle	
Contact Person: Stephen Raymond	Proj. Location: Vernon, CT		
Address: 5 Commerce Park North Suite 201	City, State: Bedford, NH	Zip: 03110	PO #
Tel. 603-232-8749	email: Stephen.Raymond@GZA.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: Total Metals (Pb, Cr, Cr only) *	Analysis: PCB 8082
8	9/10/15	1225	C	S	8-Wood-1	1	2	AG	8oz 4oz	X	X
9	9/10/15	1240	C	S	7-Masonry/Concrete-1	1	2	AG	4oz	X	X
10	9/10/15	1300	C	S	13-Masonry/Concrete-1	1	2	AG	4oz	X	X
11	9/10/15	1340	C	S	2-Masonry/concrete-1	1	2	AG	4oz	X	X
12	9/10/15	1425	C	S	Shed-concrete-1	1	2	AG	4oz	X	X
13	9/10/15	1410	C	S	2/7-Wood-1	1	2	AG	4oz	X	X
JL 9/14/15	9/10/15										

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes _____ No

Seals Intact ____ Yes ____ No NA:____

Cooler Temperature: 3.0 Ice 9-11-15 17:00 [ ] Technician____

Internal Use Only

[✓] Pickup

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: * TCLP 20x rule for metals. Please call PM.

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
9/11/15 1550	Custody Seal - GZA Fridge 9/11/15 1550	GZA Fridge 9-14-15 13:40	9-14-15 13:40
Relinquished by: (Signature, Date & Time) 9-14-15 17:00	Received by: (Signature, Date & Time) 9/14/15 1840	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

ESS Laboratory

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Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1508328

Turn Time X Standard Other_____

Regulatory State: MA RI (CT) NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Reporting Limits - _____

Electonic Deliverables *Excel Access PDF

Co. Name: GZA	Project #: 05-0045441.00	Project Name: Amerbelle	
Contact Person: Stephen Raymond	Proj. Location: Vernon, CT		
Address: 5 Commerce Park North Suite 201	City, State: Bedford, NH	Zip: 03110	PO #
Tel. 603-232-8749	email: Stephen.Raymond@GZA.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: PCB Soxhlet
14	9/10/15	1042	G	S	PCB-14-1	1	1	AG	2oz	X
15	9/10/15	1047	G	S	PCB-14-2	1	1	AG	2oz	X
16	9/10/15	1109	G	S	PCB-14-3	1	1	AG	2oz	X
17	9/10/15	1121	G	S	PCB-14-4	1	1	AG	2oz	X
18	9/10/15	1453	G	S	PCB-13-1	1	1	AG	2oz	X
19	9/10/15	1518	G	S	PCB-7-1	1	1	AG	2oz	X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: 3.0 1PM 9-14-15 17:00

Internal Use Only

[V] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by : Stephen Raymond + Rebecca Cap

Comments:

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
9/11/15 1550	Custody Seal-GZA Fridge 9/11/15 1550	GZA Fridge 9-14-15 13:40	9-14-15 13:40
9-14-15 13:06	9/14/15 1840		

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

CERTIFICATE OF ANALYSIS

Stephen Raymond
GZA GeoEnvironmental, Inc.
5 Commerce Park North
Bedford, NH 03110

RE: Amerbelle (05.0045441.00)
ESS Laboratory Work Order Number: 1510018

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:25 pm, Oct 14, 2015

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1510018

SAMPLE RECEIPT

The following samples were received on October 06, 2015 for the analyses specified on the enclosed Chain of Custody Record.

To achieve Reasonable Confidence Protocols (RCP) compliance for Connecticut data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All RCP requirements have been achieved unless noted in the project narrative.

Question 5: **Each method has been set-up in the laboratory to reach required RCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes (ie for GWPC samples, 1,2-Dibromoethane regulatory levels will not be met by VOA 8260. If this is a contaminant of concern Method 8011 will need to be used.). The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.**

These samples were originally received on September 14, 2015 as ESS Laboratory Sample IDs 1509328-02 through 1509328-05, 1509328-07 and 1509328-13.

Lab Number	Sample Name	Matrix	Analysis
1510018-01	14-S Wall-1	Soil	1312, 1312/6010B
1510018-02	14-N Wall-1	Soil	1312, 1312/6010B
1510018-03	14-E-W Wall-1	Soil	1312, 1312/6010B
1510018-04	14-Wood-1	Soil	1312, 1312/6010B
1510018-05	8-Masonry-Concrete-1	Soil	1312, 1312/6010B
1510018-06	2-7-Wood-1	Soil	1312, 1312/6010B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1510018

PROJECT NARRATIVE

SPLP Extraction by 1312
1510018-06 **Reduced weight used for TCLP/SPLP Extraction.**

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1510018

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-S Wall-1
Date Sampled: 09/10/15 09:25
Percent Solids: N/A

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-01
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A SPLP

1312 SPLP Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Lead	ND (0.010)		1312/6010B		1	BJV	10/05/15 15:24	50	25	CJ50506

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-S Wall-1
Date Sampled: 09/10/15 09:25
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1312

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-01
Sample Matrix: Soil
Units: °C
Analyst: KJK
Prepared: 10/2/15 18:05

SPLP Extraction by 1312

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**15.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Max C)	**23.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Range)	**Temperature is not within 23 +/-2 ºC.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-N Wall-1
Date Sampled: 09/10/15 09:40
Percent Solids: N/A

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-02
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A SPLP

1312 SPLP Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Lead	ND (0.010)		1312/6010B		1	BJV	10/05/15 15:28	50	25	CJ50506

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-N Wall-1
Date Sampled: 09/10/15 09:40
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1312

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-02
Sample Matrix: Soil
Units: °C
Analyst: KJK
Prepared: 10/2/15 18:05

SPLP Extraction by 1312

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**15.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Max C)	**23.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Range)	**Temperature is not within 23 +/-2 ºC.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-E-W Wall-1
Date Sampled: 09/10/15 09:50
Percent Solids: N/A

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-03
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A SPLP

1312 SPLP Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Lead	ND (0.010)		1312/6010B		1	BJV	10/05/15 15:32	50	25	CJ50506

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-E-W Wall-1
Date Sampled: 09/10/15 09:50
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1312

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-03
Sample Matrix: Soil
Units: °C
Analyst: KJK
Prepared: 10/2/15 18:05

SPLP Extraction by 1312

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**15.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Max C)	**23.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Range)	**Temperature is not within 23 +/-2 ºC.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Wood-1
Date Sampled: 09/10/15 10:05
Percent Solids: N/A

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-04
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A SPLP

1312 SPLP Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium	**0.539** (0.010)		1312/6010B		1	KJK	10/10/15 1:36	50	25	CJ50846

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 14-Wood-1
Date Sampled: 09/10/15 10:05
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1312

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-04
Sample Matrix: Soil
Units: °C
Analyst: LAB
Prepared: 10/7/15 18:54

SPLP Extraction by 1312

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**21.0** (N/A)		1312		1	LAB	10/08/15 11:25	CJ50742
Temperature (Max C)	**22.0** (N/A)		1312		1	LAB	10/08/15 11:25	CJ50742
Temperature (Range)	**Temperature is within 23 +/-2 °C.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 8-Masonry-Concrete-1
Date Sampled: 09/10/15 12:05
Percent Solids: N/A

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-05
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A SPLP

1312 SPLP Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium	ND (0.010)		1312/6010B		1	BJV	10/05/15 15:37	50	25	CJ50506

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 8-Masonry-Concrete-1
Date Sampled: 09/10/15 12:05
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1312

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-05
Sample Matrix: Soil
Units: °C
Analyst: KJK
Prepared: 10/2/15 18:05

SPLP Extraction by 1312

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**15.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Max C)	**23.0** (N/A)		1312		1	KJK	10/03/15 10:15	CJ50233
Temperature (Range)	**Temperature is not within 23 +/-2 ºC.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 2-7-Wood-1
Date Sampled: 09/10/15 14:10
Percent Solids: N/A

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-06
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A SPLP

1312 SPLP Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Lead	**0.259** (0.010)		1312/6010B		1	KJK	10/10/15 1:41	50	25	CJ50846

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: 2-7-Wood-1
Date Sampled: 09/10/15 14:10
Percent Solids: N/A
Initial Volume: 39.73
Final Volume: 794.6
Extraction Method: 1312

ESS Laboratory Work Order: 1510018
ESS Laboratory Sample ID: 1510018-06
Sample Matrix: Soil
Units: °C
Analyst: LAB
Prepared: 10/7/15 18:54

SPLP Extraction by 1312

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**21.0** (N/A)		1312		1	LAB	10/08/15 11:25	CJ50742
Temperature (Max C)	**22.0** (N/A)		1312		1	LAB	10/08/15 11:25	CJ50742
Temperature (Range)	**Temperature is within 23 +/-2 °C.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1510018

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
1312 SPLP Metals										
Batch CJ50506 - 3005A_SPLP										
Blank										
Chromium	ND	0.010	mg/L							
Lead	ND	0.010	mg/L							
LCS										
Chromium	0.242	0.010	mg/L	0.2500		97	80-120			
Lead	0.243	0.010	mg/L	0.2500		97	80-120			
LCS Dup										
Chromium	0.232	0.010	mg/L	0.2500		93	80-120	4	20	
Lead	0.231	0.010	mg/L	0.2500		92	80-120	5	20	
Batch CJ50846 - 3005A_SPLP										
Blank										
Chromium	ND	0.010	mg/L							
Lead	ND	0.010	mg/L							
LCS										
Chromium	0.245	0.010	mg/L	0.2500		98	80-120			
Lead	0.246	0.010	mg/L	0.2500		98	80-120			
LCS Dup										
Chromium	0.237	0.010	mg/L	0.2500		95	80-120	3	20	
Lead	0.241	0.010	mg/L	0.2500		96	80-120	2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1510018

Notes and Definitions

Z18	Temperature is not within 23 +/-2 ºC.
Z17	Temperature is within 23 +/-2 ºC.
U	Analyte included in the analysis, but not detected
RW	Reduced weight used for TCLP/SPLP Extraction.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1510018

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc. NH
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 15100018
Date Project Due: 10/8/15
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **3.0**		16. Are ESS labels on correct containers?	**Yes|No**
Iced With: **Ice**		17. Were samples received intact?	**Yes|No**
6. Was COC included with samples?	Yes	ESS Sample IDs: _____	
7. Was COC signed and dated by client?	Yes	Sub Lab: _____	
8. Does the COC match the sample	Yes	Analysis: _____	
9. Is COC complete and correct?	Yes	TAT: _____	

18. Was there need to call project manager to discuss status? If yes, please explain.
Added 2 jars of 14-0000-1 w 10/6/15

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	2	NP
2	Yes	4 oz Soil Jar	2	NP
3	Yes	4 oz Soil Jar	2	NP
4	Yes	8 oz Soil Jar	3	NP
5	Yes	4 oz Soil Jar	2	NP
6	Yes	4 oz Soil Jar	2	NP

Completed By: _____ Date/Time: 10/6/15 1804
Reviewed By: _____ Date/Time: 10/6/15 2055

CUSTODY SEAL

NMENTAL SAMPLING SUPPLY
com 800-233-8425

Signature: _____

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc. NH
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 15100018
Date Project Due: 10/8/15
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **3.0**		16. Are ESS labels on correct containers?	**Yes** | **No**
Iced With: **Ice**		17. Were samples received intact?	**Yes** | **No**
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	4 oz Soil Jar	2	NP
2	Yes	4 oz Soil Jar	2	NP
3	Yes	4 oz Soil Jar	2	NP
4	Yes	8 oz Soil Jar	1	NP
5	Yes	4 oz Soil Jar	2	NP
6	Yes	4 oz Soil Jar	2	NP

Completed By: _____ Date/Time: 10/1/15 1610
Reviewed By: _____ Date/Time: 10/1/15 1627

Relog per client request 9/30/15 CMT

1510018

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1509328

Turn Time X Standard Other_____

Regulatory State: MA RI (CT) NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Reporting Limits - _____

Electonic Deliverables *Excel Access PDF

Co. Name: GZA	Project #: 05-0045441.00	Project Name: Amerbelle	
Contact Person: Stephen Raymond	Proj. Location: Veaner, CT		
Address: 5 Commerce Park North Suite 201	City, State: Bedford, NH	Zip: 03110	PO #
Tel. 603-232-8749	email: Stephen.Raymond@GZA.com		

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis: * Total Metal (Pb, Cr only)	PCB Soils	SPLP Pb	SPLP Cr
~~1~~	~~9/10/15~~	~~0905~~	~~C~~	~~S~~	~~14-Foundation-1~~	~~1~~	~~2~~	~~AG~~	~~4oz~~	~~X~~	~~X~~		
2	9/10/15	0925	C	S	14-S.Wall-1	1	2	AG	4oz	X	X	X	
3	9/10/15	0940	C	S	14-N.Wall-1	1	2	AG	4oz	X	X	X	
4	9/10/15	0950	C	S	14-E/W Wall-1	1	2	AG	4oz	X	X	X	
5	9/10/15	1005	C	S	14-Wood-1	1	2	AG	8oz 4oz	X	X		X
~~6~~	~~9/10/15~~	~~1025~~	~~C~~	~~S~~	~~14-Floor Slab-1~~	~~1~~	~~2~~	~~AG~~	~~4oz~~	~~X~~	~~X~~		
7	9/10/15	1205	C	S	8-Masonry/Concrete-1	1	2	AG	4oz	X	X		X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes ____ No NA:____

Cooler Temperature: 3.0 Ice 9-14-15 17:06

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-____

Sampled by: Stephen Raymond + Rebecca Cox

Comments: ~~* TCLP 7DX cmt~~

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
R. Cox 9/11/15 1550	Custody Seal - GZA fridge 9/11/15 1550	GZA Fridge 9-11-15 13:40	Mark Mom 9/14/15 3.5°C
Mark Mom 9-14-15 17:06	9/14/15 1840		

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time: X Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____

State where samples were collected from:
MA RI (CT) NH NJ NY ME Other _____

Is this project for any of the following:
MA-MCP Navy USACE Other _____

Reporting Limits

ESS LAB PROJECT ID: 1510018

Electronic Deliverable Yes ___ No ___
Format: Excel __ Access __ PDF __ Other _____

Co. Name	Project #	Project Name (20 Char. or less)
GZA	05-0045411.00	Amerbelle

Contact Person	Address
Stephen Raymond	5 Commerce Park North Suite 201

City	State	Zip	PO#
Bedford	NH	03110	

Telephone #	Fax #	Email Address
603-232-8749		Stephen.Raymond@gza.com

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	Write Required Analysis: TCLP Cr
4	9/10/15	1005	X		SD	14-Wood-1	1	32*	G	X

Container Type: P-Poly G-Glass S-Sterile V-VOA
Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ___ Yes ___ No
Seals Intact ___ Yes ___ No NA: ___
Cooler Temp: Ice 12

Internal Use Only
[ ] Pickup
[ ] Technicians ____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: Stephen Raymond + Rebecca Cox

Comments: * Additional sample volume to be added to sample retained by ESS from previous metals analysis.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	10/5/15 0940	Custody Seal/GZA Fedex	10/5/15 0940	GZA Fedex	10-6 11:22	[signature]	10-6 11:22
[signature]	10-6-15 17:35	[signature]	10/6/15 1745				

By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

Relog per client request 9/30/15 CAT

15 10018

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # ~~1508328~~

Turn Time X Standard Other_____

Regulatory State: MA RI (CT) NH NJ NY ME Other_____

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

Reporting Limits - _____

Electonic Deliverables *Excel Access PDF

Co. Name	Project #	Project Name
GZA	05-0045441.00	Amerbelle

Contact Person	Proj. Location
Stephen Raymond	Vernon, CT

Address	City, State	Zip	PO #
5 Commerce Park North Suite 201	Bedford, NH	03110	

Tel	email:
603-232-8749	Stephen.Raymond@GZA.com

Analysis: Total Metals (Pb, Cr only)*; TCLP Pb; TCLP Cr

ESS Lab ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Total Metals (Pb, Cr only)*	TCLP Pb	TCLP Cr
~~8~~	~~9/10/15~~	~~1205~~	~~C~~	~~S~~	~~8 Wood-1~~	~~1~~	~~2~~	~~AG~~	~~8oz 4oz~~	~~X~~	~~X~~	
~~9~~	~~9/10/15~~	~~1290~~	~~C~~	~~S~~	~~9 Masonry/Concrete-1~~	~~1~~	~~2~~	~~AG~~	~~4oz~~	~~X~~	~~X~~	
~~10~~	~~9/10/15~~	~~1300~~	~~C~~	~~S~~	~~10 Masonry/Concrete-1~~	~~1~~	~~2~~	~~AG~~	~~4oz~~	~~X~~	~~X~~	
~~11~~	~~9/10/15~~	~~1340~~	~~C~~	~~S~~	~~11 Masonry/Concrete-1~~	~~1~~	~~2~~	~~AG~~	~~4oz~~	~~X~~	~~X~~	
~~12~~ 13	9/10/15	1425	C	S	Shed-Concrete-1	1	2	AG	4oz	X	X	
13	9/10/15	1410	C	S	2/7-Wood-1	1	2	AG	4oz	X	X	X
5-9/11/15	~~9/10/15~~											

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes ____No

Seals Intact ____Yes ____No NA:____

Cooler Temperature: 3.0 ice 9-11-15 17:45 [ ] Technician____

Internal Use Only

[1] Pickup

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: * TCLP 20x rule for metals. Please call PM.

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
9/11/15 1550	Custody Seal - GZA Fridge 9/11/15 1550	GZA Fridge 9-11-15 13:40	9-14-15 13:40
Relinquished by: (Signature, Date & Time) 9-14-15 17:00	Received by: (Signature, Date & Time) 9/14/15 1840	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

Report Method Blank & Laboratory Control Sample Results

CERTIFICATE OF ANALYSIS

Sean Connolly
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive Suite 402
Glastonbury, CT 06033

RE: Amerbelle (04.0045441)
ESS Laboratory Work Order Number: 1511069

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:45 pm, Nov 11, 2015

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

SAMPLE RECEIPT

The following samples were received on November 04, 2015 for the analyses specified on the enclosed Chain of Custody Record.

To achieve Reasonable Confidence Protocols (RCP) compliance for Connecticut data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All RCP requirements have been achieved unless noted in the project narrative.

Question 5: **Each method has been set-up in the laboratory to reach required RCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes (ie for GWPC samples, 1,2-Dibromoethane regulatory levels will not be met by VOA 8260. If this is a contaminant of concern Method 8011 will need to be used.). The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.**

Lab Number	Sample Name	Matrix	Analysis
1511069-01	B14 - Paint White on Metal	Solid	8082
1511069-02	B14 - Paint Grey on Metal	Solid	8082
1511069-03	B8 - Wood	Solid	1311, 1311/6010C
1511069-04	B2/7 - Wood	Solid	1311, 1311/6010C
1511069-05	B14 - Wood 1	Solid	1311, 1311/6010C, 8100M
1511069-06	B14 - Wood 2	Solid	1311, 1311/6010C, 8100M

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1511069-01	**Percent difference between primary and confirmation results exceeds 40% (P).**
	Aroclor 1254
1511069-01	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
	Decachlorobiphenyl [2C] (4810% @ 30-150%)
1511069-02	**Percent difference between primary and confirmation results exceeds 40% (P).**
	Aroclor 1254 , Aroclor 1260
1511069-02	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
	Decachlorobiphenyl (7530% @ 30-150%), Tetrachloro-m-xylene [2C] (255% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Laboratory Analysis
QA/QC Certification Form

Project Number: **04.0045441**
Sampling Date(s): **11/2/2015 through 11/3/2015**
Laboratory Sample ID(s): **1511069-01 through 1511069-06**

List RCP Methods Used	( ) 8260B	( ) 8151A	( ) ETPH	( ) 6010B	( ) 7470A/1A
Other: _____	( ) 8270C	( ) 8081A	( ) VPH	( ) 6020	( ) 9014M
_____	(X) 8082	( ) 8021B	( ) EPH	( ) 7000 S	( ) 7196A

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria failing outside of acceptable guidelines, as specified in the CTDEP method-specific Reasonable Confidence Protocol documents?	Yes (X) No ( )
1A	Were the method specified preservation and holding time requirements met?	Yes (X) No ( )
1B	***VPH and EPH Methods only:*** Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective RCP methods)?	Yes ( ) No ( ) N/A (X)
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	Yes (X) No ( )
3	Were samples received at an appropriate temperature (<6º Cº)?	Yes (X) No ( ) N/A ( )
4	Were all QA/QC performance criteria specified in the CTDEP Reasonable Confidence Protocol documents achieved?	Yes ( ) No (X)
5	a) Were reporting limits specified or referenced on the chain-of-custody? b) Were these reporting limits met?	Yes (X) No ( ) Yes (X) No ( )
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	Yes (X) No ( )
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	Yes ( ) No (X)

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence." This form may not be altered and all questions must be answered.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Laurel Stoddard Position: Laboratory Director

Printed Name: Laurel Stoddard Date: November 11, 2015

Name of Laboratory: ESS Laboratory

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Paint White on Metal
Date Sampled: 11/02/15 14:45
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-01
Sample Matrix: Solid
Units: mg/kg wet
Analyst: TJ
Prepared: 11/5/15 18:14

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1221	ND (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1232	ND (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1242	ND (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1248	ND (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1254	**P 2.02** (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1260	ND (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1262	ND (0.400)		8082		4	11/11/15 11:36		CK51134
Aroclor 1268	ND (0.400)		8082		4	11/11/15 11:36		CK51134

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*57 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*4810 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*61 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Paint Grey on Metal
Date Sampled: 11/02/15 15:00
Percent Solids: N/A
Initial Volume: 4.69
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-02
Sample Matrix: Solid
Units: mg/kg wet
Analyst: TJ
Prepared: 11/5/15 18:14

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.213)		8082		1	11/06/15 19:56		CK50406
Aroclor 1221	ND (0.213)		8082		1	11/06/15 19:56		CK50406
Aroclor 1232	ND (0.213)		8082		1	11/06/15 19:56		CK50406
Aroclor 1242	**6.25** (2.13)		8082		10	11/11/15 10:20		CK50406
Aroclor 1248	ND (0.213)		8082		1	11/06/15 19:56		CK50406
Aroclor 1254	**P 14.9** (2.13)		8082		10	11/11/15 10:20		CK50406
Aroclor 1260	**P 7.41** (2.13)		8082		10	11/11/15 10:20		CK50406
Aroclor 1262	ND (0.213)		8082		1	11/06/15 19:56		CK50406
Aroclor 1268	ND (0.213)		8082		1	11/06/15 19:56		CK50406

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*7530 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*51 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*255 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B8 - Wood
Date Sampled: 11/03/15 07:30
Percent Solids: N/A

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-03
Sample Matrix: Solid
Units: mg/L

Extraction Method: 3005A TCLP

TCLP Extraction Date: 11/6/15 14:37

1311 TCLP Metals

Analyte	Results (MRL)	MDL	Method	TCLP Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium	ND (0.020)		1311/6010C		1	KJK	11/06/15 23:50	50	50	CK50629
Lead	ND (0.050)		1311/6010C		1	KJK	11/06/15 23:50	50	50	CK50629

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B8 - Wood
Date Sampled: 11/03/15 07:30
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-03
Sample Matrix: Solid
Units: °C
Analyst: BJV
Prepared: 11/5/15 17:35

TCLP Extraction by 1311

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**22.5** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Max C)	**23.0** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Range)	**Temperature is within 23 +/-2 °C.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B2/7 - Wood
Date Sampled: 11/03/15 08:00
Percent Solids: N/A

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-04
Sample Matrix: Solid
Units: mg/L

Extraction Method: 3005A TCLP

TCLP Extraction Date: 11/6/15 14:37

1311 TCLP Metals

Analyte	Results (MRL)	MDL	Method	TCLP Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium	ND (0.020)		1311/6010C		1	KJK	11/06/15 23:55	50	50	CK50629
Lead	ND (0.050)		1311/6010C		1	KJK	11/06/15 23:55	50	50	CK50629

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B2/7 - Wood
Date Sampled: 11/03/15 08:00
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-04
Sample Matrix: Solid
Units: °C
Analyst: BJV
Prepared: 11/5/15 17:35

TCLP Extraction by 1311

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**22.5** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Max C)	**23.0** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Range)	**Temperature is within 23 +/-2 °C.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Wood 1
Date Sampled: 11/03/15 08:15
Percent Solids: 93

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-05
Sample Matrix: Solid
Units: mg/L

Extraction Method: 3005A TCLP

TCLP Extraction Date: 11/6/15 14:37

1311 TCLP Metals

Analyte	Results (MRL)	MDL	Method	TCLP Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium	ND (0.020)		1311/6010C		1	KJK	11/07/15 0:12	50	50	CK50629
Lead	ND (0.050)		1311/6010C		1	KJK	11/07/15 0:12	50	50	CK50629

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Wood 1
Date Sampled: 11/03/15 08:15
Percent Solids: 93
Initial Volume: 10
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-05
Sample Matrix: Solid
Units: mg/kg dry
Analyst: ZLC
Prepared: 11/5/15 10:51

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**17500** (161)		8100M		5	11/06/15 17:38	CYK0108	CK50513

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*77 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Wood 1
Date Sampled: 11/03/15 08:15
Percent Solids: 93
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-05
Sample Matrix: Solid
Units: °C
Analyst: BJV
Prepared: 11/5/15 17:35

TCLP Extraction by 1311

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**22.5** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Max C)	**23.0** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Range)	**Temperature is within 23 +/-2 °C.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Wood 2
Date Sampled: 11/03/15 08:30
Percent Solids: 94

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-06
Sample Matrix: Solid
Units: mg/L

Extraction Method: 3005A TCLP

TCLP Extraction Date: 11/6/15 14:37

1311 TCLP Metals

Analyte	Results (MRL)	MDL	Method	TCLP Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium	ND (0.020)		1311/6010C		1	KJK	11/07/15 0:16	50	50	CK50629
Lead	**0.145** (0.050)		1311/6010C		1	KJK	11/07/15 0:16	50	50	CK50629

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Wood 2
Date Sampled: 11/03/15 08:30
Percent Solids: 94
Initial Volume: 10.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-06
Sample Matrix: Solid
Units: mg/kg dry
Analyst: ZLC
Prepared: 11/5/15 10:51

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**41300** (314)		8100M		10	11/06/15 18:16	CYK0108	CK50513

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*118 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle
Client Sample ID: B14 - Wood 2
Date Sampled: 11/03/15 08:30
Percent Solids: 94
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1511069
ESS Laboratory Sample ID: 1511069-06
Sample Matrix: Solid
Units: °C
Analyst: BJV
Prepared: 11/5/15 17:35

TCLP Extraction by 1311

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Batch
Temperature (Min C)	**22.5** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Max C)	**23.0** (N/A)		1311		1	BJV	11/06/15 10:57	CK50548
Temperature (Range)	**Temperature is within 23 +/-2 °C.** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
1311 TCLP Metals										
Batch CK50629 - 3005A_TCLP										
Blank										
Chromium	ND	0.020	mg/L							
Lead	ND	0.050	mg/L							
LCS										
Chromium	0.483	0.020	mg/L	0.5000		97	80-120			
Lead	0.472	0.050	mg/L	0.5000		94	80-120			
LCS Dup										
Chromium	0.476	0.020	mg/L	0.5000		95	80-120	1	20	
Lead	0.471	0.050	mg/L	0.5000		94	80-120	0.2	20	
8082 Polychlorinated Biphenyls (PCB)										
Batch CK50406 - 3540C										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1016 (1)	ND	0.0500	mg/kg wet							
Aroclor 1016 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (2)	ND	0.0500	mg/kg wet							
Aroclor 1016 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (3)	ND	0.0500	mg/kg wet							
Aroclor 1016 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (4)	ND	0.0500	mg/kg wet							
Aroclor 1016 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (5)	ND	0.0500	mg/kg wet							
Aroclor 1016 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1221 (1)	ND	0.0500	mg/kg wet							
Aroclor 1221 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (2)	ND	0.0500	mg/kg wet							
Aroclor 1221 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (3)	ND	0.0500	mg/kg wet							
Aroclor 1221 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (4)	ND	0.0500	mg/kg wet							
Aroclor 1221 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (5)	ND	0.0500	mg/kg wet							
Aroclor 1221 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1232 (1)	ND	0.0500	mg/kg wet							
Aroclor 1232 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (2)	ND	0.0500	mg/kg wet							
Aroclor 1232 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (3)	ND	0.0500	mg/kg wet							
Aroclor 1232 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (4)	ND	0.0500	mg/kg wet							
Aroclor 1232 (4) [2C]	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CK50406 - 3540C										
Aroclor 1232 (5)	ND	0.0500	mg/kg wet							
Aroclor 1232 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1242 (1)	ND	0.0500	mg/kg wet							
Aroclor 1242 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (2)	ND	0.0500	mg/kg wet							
Aroclor 1242 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (3)	ND	0.0500	mg/kg wet							
Aroclor 1242 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (4)	ND	0.0500	mg/kg wet							
Aroclor 1242 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (5)	ND	0.0500	mg/kg wet							
Aroclor 1242 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1248 (1)	ND	0.0500	mg/kg wet							
Aroclor 1248 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (2)	ND	0.0500	mg/kg wet							
Aroclor 1248 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (3)	ND	0.0500	mg/kg wet							
Aroclor 1248 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (4)	ND	0.0500	mg/kg wet							
Aroclor 1248 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (5)	ND	0.0500	mg/kg wet							
Aroclor 1248 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1254 (1)	ND	0.0500	mg/kg wet							
Aroclor 1254 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (2)	ND	0.0500	mg/kg wet							
Aroclor 1254 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (3)	ND	0.0500	mg/kg wet							
Aroclor 1254 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (4)	ND	0.0500	mg/kg wet							
Aroclor 1254 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (5)	ND	0.0500	mg/kg wet							
Aroclor 1254 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1260 (1)	ND	0.0500	mg/kg wet							
Aroclor 1260 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (2)	ND	0.0500	mg/kg wet							
Aroclor 1260 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (3)	ND	0.0500	mg/kg wet							
Aroclor 1260 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (4)	ND	0.0500	mg/kg wet							
Aroclor 1260 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (5)	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CK50406 - 3540C										
Aroclor 1260 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1262 (1)	ND	0.0500	mg/kg wet							
Aroclor 1262 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (2)	ND	0.0500	mg/kg wet							
Aroclor 1262 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (3)	ND	0.0500	mg/kg wet							
Aroclor 1262 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (4)	ND	0.0500	mg/kg wet							
Aroclor 1262 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (5)	ND	0.0500	mg/kg wet							
Aroclor 1262 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Aroclor 1268 (1)	ND	0.0500	mg/kg wet							
Aroclor 1268 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (2)	ND	0.0500	mg/kg wet							
Aroclor 1268 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (3)	ND	0.0500	mg/kg wet							
Aroclor 1268 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (4)	ND	0.0500	mg/kg wet							
Aroclor 1268 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (5)	ND	0.0500	mg/kg wet							
Aroclor 1268 (5) [2C]	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0252*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0199*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0243*		mg/kg wet	*0.02500*		*97*	*30-150*			
LCS										
Aroclor 1016	0.482	0.0500	mg/kg wet	0.5000		96	40-140			
Aroclor 1260	0.500	0.0500	mg/kg wet	0.5000		100	40-140			
Surrogate: Decachlorobiphenyl	*0.0225*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0241*		mg/kg wet	*0.02500*		*96*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0196*		mg/kg wet	*0.02500*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
LCS Dup										
Aroclor 1016	0.516	0.0500	mg/kg wet	0.5000		103	40-140	7	50	
Aroclor 1260	0.549	0.0500	mg/kg wet	0.5000		110	40-140	9	50	
Surrogate: Decachlorobiphenyl	*0.0248*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0264*		mg/kg wet	*0.02500*		*106*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			
Batch CK51134 - 3540C										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CK51134 - 3540C										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1016 (1)	ND	0.0500	mg/kg wet							
Aroclor 1016 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (2)	ND	0.0500	mg/kg wet							
Aroclor 1016 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (3)	ND	0.0500	mg/kg wet							
Aroclor 1016 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (4)	ND	0.0500	mg/kg wet							
Aroclor 1016 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1016 (5)	ND	0.0500	mg/kg wet							
Aroclor 1016 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1221 (1)	ND	0.0500	mg/kg wet							
Aroclor 1221 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (2)	ND	0.0500	mg/kg wet							
Aroclor 1221 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (3)	ND	0.0500	mg/kg wet							
Aroclor 1221 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (4)	ND	0.0500	mg/kg wet							
Aroclor 1221 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1221 (5)	ND	0.0500	mg/kg wet							
Aroclor 1221 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1232 (1)	ND	0.0500	mg/kg wet							
Aroclor 1232 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (2)	ND	0.0500	mg/kg wet							
Aroclor 1232 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (3)	ND	0.0500	mg/kg wet							
Aroclor 1232 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (4)	ND	0.0500	mg/kg wet							
Aroclor 1232 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1232 (5)	ND	0.0500	mg/kg wet							
Aroclor 1232 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1242 (1)	ND	0.0500	mg/kg wet							
Aroclor 1242 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (2)	ND	0.0500	mg/kg wet							
Aroclor 1242 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (3)	ND	0.0500	mg/kg wet							
Aroclor 1242 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (4)	ND	0.0500	mg/kg wet							
Aroclor 1242 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1242 (5)	ND	0.0500	mg/kg wet							
Aroclor 1242 (5) [2C]	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CK51134 - 3540C										
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1248 (1)	ND	0.0500	mg/kg wet							
Aroclor 1248 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (2)	ND	0.0500	mg/kg wet							
Aroclor 1248 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (3)	ND	0.0500	mg/kg wet							
Aroclor 1248 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (4)	ND	0.0500	mg/kg wet							
Aroclor 1248 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1248 (5)	ND	0.0500	mg/kg wet							
Aroclor 1248 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1254 (1)	ND	0.0500	mg/kg wet							
Aroclor 1254 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (2)	ND	0.0500	mg/kg wet							
Aroclor 1254 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (3)	ND	0.0500	mg/kg wet							
Aroclor 1254 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (4)	ND	0.0500	mg/kg wet							
Aroclor 1254 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1254 (5)	ND	0.0500	mg/kg wet							
Aroclor 1254 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1260 (1)	ND	0.0500	mg/kg wet							
Aroclor 1260 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (2)	ND	0.0500	mg/kg wet							
Aroclor 1260 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (3)	ND	0.0500	mg/kg wet							
Aroclor 1260 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (4)	ND	0.0500	mg/kg wet							
Aroclor 1260 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1260 (5)	ND	0.0500	mg/kg wet							
Aroclor 1260 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1262 (1)	ND	0.0500	mg/kg wet							
Aroclor 1262 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (2)	ND	0.0500	mg/kg wet							
Aroclor 1262 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (3)	ND	0.0500	mg/kg wet							
Aroclor 1262 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (4)	ND	0.0500	mg/kg wet							
Aroclor 1262 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1262 (5)	ND	0.0500	mg/kg wet							
Aroclor 1262 (5) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CK51134 - 3540C										
Aroclor 1268 (1)	ND	0.0500	mg/kg wet							
Aroclor 1268 (1) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (2)	ND	0.0500	mg/kg wet							
Aroclor 1268 (2) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (3)	ND	0.0500	mg/kg wet							
Aroclor 1268 (3) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (4)	ND	0.0500	mg/kg wet							
Aroclor 1268 (4) [2C]	ND	0.0500	mg/kg wet							
Aroclor 1268 (5)	ND	0.0500	mg/kg wet							
Aroclor 1268 (5) [2C]	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0184*		mg/kg wet	*0.02500*		*74*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0253*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0138*		mg/kg wet	*0.02500*		*55*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0123*		mg/kg wet	*0.02500*		*49*	*30-150*			
LCS										
Aroclor 1016	0.341	0.0500	mg/kg wet	0.5000		68	40-140			
Aroclor 1260	0.373	0.0500	mg/kg wet	0.5000		75	40-140			
Surrogate: Decachlorobiphenyl	*0.0175*		mg/kg wet	*0.02500*		*70*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0226*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0130*		mg/kg wet	*0.02500*		*52*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0113*		mg/kg wet	*0.02500*		*45*	*30-150*			
LCS Dup										
Aroclor 1016	0.397	0.0500	mg/kg wet	0.5000		79	40-140	15	50	
Aroclor 1260	0.452	0.0500	mg/kg wet	0.5000		90	40-140	19	50	
Surrogate: Decachlorobiphenyl	*0.0199*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0327*		mg/kg wet	*0.02500*		*131*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0154*		mg/kg wet	*0.02500*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0135*		mg/kg wet	*0.02500*		*54*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CK50513 - 3546										
Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Quality Control Data

8100M Total Petroleum Hydrocarbons

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CK50513 - 3546										
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	15.0	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
Surrogate: O-Terphenyl	*4.95*		mg/kg wet	*5.000*		*99*	*40-140*			
LCS										
Decane (C10)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		105	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Eicosane (C20)	2.6	0.2	mg/kg wet	2.500		106	40-140			
Hexacosane (C26)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Nonadecane (C19)	2.9	0.2	mg/kg wet	2.500		114	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140			
Octacosane (C28)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		104	40-140			
Tetracosane (C24)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		104	40-140			
Total Petroleum Hydrocarbons	34.6	15.0	mg/kg wet	35.00		99	40-140			
Triacontane (C30)	2.6	0.2	mg/kg wet	2.500		104	40-140			
Surrogate: O-Terphenyl	*5.06*		mg/kg wet	*5.000*		*101*	*40-140*			
LCS Dup										
Decane (C10)	2.0	0.2	mg/kg wet	2.500		80	40-140	2	50	
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		100	40-140	4	50	
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		96	40-140	0.05	50	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		101	40-140	4	50	
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		102	40-140	4	50	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		100	40-140	6	50	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		105	40-140	8	50	
Nonane (C9)	1.9	0.2	mg/kg wet	2.500		75	30-140	3	50	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		99	40-140	4	50	
Octadecane (C18)	2.5	0.2	mg/kg wet	2.500		101	40-140	4	50	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		95	40-140	4	50	
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		96	40-140	8	50	
Total Petroleum Hydrocarbons	33.6	15.0	mg/kg wet	35.00		96	40-140	3	50	
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		100	40-140	4	50	
Surrogate: O-Terphenyl	*4.80*		mg/kg wet	*5.000*		*96*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

Notes and Definitions

Z17	Temperature is within 23 +/-2 ºC.
U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
P	Percent difference between primary and confirmation results exceeds 40% (P).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Amerbelle

ESS Laboratory Work Order: 1511069

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

Sample and Cooler Receipt Checklist

Client: GZA GeoEnviromental Inc
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 15110069
Date Project Due: 11/11/15
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **4.8**		16. Are ESS labels on correct containers?	**Yes|No**
Iced With: **Ice**		17. Were samples received intact?	**Yes|No**
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	Plastic Bag	1	NP
2	Yes	Plastic Bag	1	NP
3	Yes	8 oz Soil Jar	2	NP
4	Yes	8 oz Soil Jar	2	NP
5	Yes	8 oz Soil Jar	3	NP
6	Yes	8 oz Soil Jar	3	NP

Completed By: _____ Date/Time: 11/4/15 1722

Reviewed By: _____ Date/Time: 11/4/15 2044

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time: X Standard Other ____ If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from: MA RI CT NH NJ NY ME Other ____

Is this project for any of the following: MA-MCP Navy USACE Other ____

Reporting Limits: Previous Project limits

ESS LAB PROJECT ID: 1511069

Electronic Deliverable: Yes X No ____

Format: Excel X Access ____ PDF X Other ____

Co. Name	Project #	Project Name (20 Char. or less)
GZA GeoEnvironmental	04.0045441	Amerbelle

Contact Person	Address
Sean Connolly	655 Winding Brook Dr., Suite 402

City	State	Zip	PO#
Glastonbury	CT	06033	

Telephone #	Fax #	Email Address
860 508 7273		Sean.Connolly@gza.com

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 VOA 524.2	624	VPH 8021 MTBE/BTEX	8015 GRO w/targets	8015 DRO 8100 TPH	EPH w/o PAHs	EPH w/PAHs 4 Diesel	8081 Pesticides	8082 PCB	608 Pesticides	608 PCB	8270 SVOA PAH 8270	625	RCRA8	PP13	TAL23	RCRA8	TCLP-RCRA8	NBC7	MCP-METALS (13)	MCP-METALS (13) w/Hg	TCLP Chrome	TCLP Lead	PCB's (mineral oil/soil)			
1	11/2/15	1445	X		SD	B14 - Paint White on metal	1	1	P-reg																							X			
2	11/2/15	1500	X		SD	B14 - Paint Grey on metal	1	1	P-reg																							X			
3	11/3/15	0730	X		SD	B8 - Wood	1	2	902 C																							X	X			
4	11/3/15	0800	X		SD	B2/7 - Wood	1	2	902 C																							X	X			
5	11/3/15	0815	X		SD	B14 - Wood 1	1	3	902 C					X																	X	X			
6	11/3/15	0830	X		SD	B14 - Wood 2	1	3	902 C					X																	X	X			

Container Type: P-Poly G-Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: ✓ Yes ___ No

Seals Intact: ___ Yes ___ No NA: ___

Cooler Temp: 4.8 ice 11/4/15 16.35

Internal Use Only: [✓] Pickup [ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: Sean Connolly

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Sean Connolly	11/4/15 0830	GZA Fryge	11/4/15 0830	GZA Fryge	11/4/15 1711		
	11/4/15 16:35		11/4/15 1713				

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

ProScience Analytical Services, Inc

Andrew Pomeroy
GZA GeoEnvironmental, Inc., NH
5 Commerce Park North
Suite 201
Bedford, NH 03110

December 09, 2015

Dear Andrew Pomeroy,

The enclosed analytical results have been obtained by using the EPA/600/R-93/116 method. The "Visual Estimate" quantitative method is generally used for determining the percentage of asbestos and other components of the sample. "The Point Counting" method may also be used upon client request or at the analyst discretion. The Point Count method is usually recommended when the sample contains less than 10% asbestos by Visual estimate. Asbestos content less than 1% is recorded on the report as TR (trace).

The Quality Control data related to the samples analyzed is available upon client's written request. ProScience Analytical Services Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested.

If you have any questions please contact the Laboratory Manager or the Laboratory Director.

Sincerely,

Patricia Weakley

Patricia Weakley, Optical Asbestos Manager

Aimee Cormier, Laboratory Director

Enclosure: Version 2
LAB BATCH ID: B 98956 CLIENT PROJECT ID: 04.0045441.02
Client Ref: Amerbelle
AIHA ID# 102754; CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056; NVLAP Lab Code 200090-0; RI ID # AAL-093; VT ID# AL016876

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-13-B-401	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Membrane and Paper
Location: Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-13-B-401B	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Membrane and Paper
Location: Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-13-B-401C	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Membrane and Paper
Location: Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-13-B-402	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Sealant
Location: Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-13-B-402B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Sealant
Location: Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415AST-1	Black	25	0	0	0	0	0	0	0	0	0	0	0	75

Description: Flashing Compound
Location: AST Ext.
Comments: Only One Layer Present. Is asbestos present? Yes. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415AST-1B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Flashing Compound
Location: AST Ext.
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-101	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 8, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-101B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 8, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-101C	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 8, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-102	Multi	0	0	0	0	0	0	25	0	25	0	0	0	50

Description: Paper
Location: Bldg. 8, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-102B	Multi	0	0	0	0	0	0	25	0	25	0	0	0	50

Description: Paper
Location: Bldg. 8, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-102C	Multi	0	0	0	0	0	0	25	0	25	0	0	0	50

Description: Paper
Location: Bldg. 8, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-103	Tan	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Glazing
Location: Bldg. 8, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-103B	Tan	TR	0	0	0	0	0	0	0	0	0	0	0	100

Description: Glazing
Location: Bldg. 8, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-8-B-103C	Tan	2	0	0	0	0	0	0	0	0	0	0	0	98

Description: Glazing
Location: Bldg. 8, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-301	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Built-up Roofing
Location: Bldg. 2, Ext.
Comments: Only One Layer Present. Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-301B	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Built-up Roofing
Location: Bldg. 2, Ext.
Comments: Only One Layer Present. Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-301C	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Built-up Roofing
Location: Bldg. 2, Ext.
Comments: Only One Layer Present.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-302	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 2, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-302B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 2, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-302C	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 2, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-303	Multi	0	0	0	0	0	0	25	0	25	0	0	0	50

Description: Paper
Location: Bldg. 2, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-303B	Multi	0	0	0	0	0	0	25	0	25	0	0	0	50

Description: Paper
Location: Bldg. 2, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-303C	Multi	0	0	0	0	0	0	25	0	25	0	0	0	50

Description: Paper
Location: Bldg. 2, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-304	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Paper
Location: Bldg. 2, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-304B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Paper
Location: Bldg. 2, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-304C	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Paper
Location: Bldg. 2, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-305	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Sealant
Location: Bldg. 2, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-305B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Sealant
Location: Bldg. 2, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-305C	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Sealant
Location: Bldg. 2, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-306	Black	45	0	0	0	0	0	0	0	0	0	0	0	55

Description: Flashing
Location: Bldg. 2, Ext.
Comments: Only One Layer Present. Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-2-B-306B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Flashing
Location: Bldg. 2, Ext.
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-501	Tan	5	0	0	0	0	0	0	0	0	0	0	0	95

Description: Glazing
Location: Bldg. 5, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-501B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Glazing
Location: Bldg. 5, Ext.
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-502	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Tar Roofing
Location: Bldg. 5, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-502B	Black	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Tar Roofing
Location: Bldg. 5, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-503	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Homasote
Location: Bldg. 5, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-503B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Homasote
Location: Bldg. 5, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-201	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 7, Ext.
Comments: Homogeneous Group. Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-201B	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 7, Ext.
Comments: Homogeneous Group. Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-201C	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 7, Ext.
Comments: Homogeneous Group. Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-202	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 7, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-202B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Fiberboard
Location: Bldg. 7, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-203	Black	25	0	0	0	0	0	0	0	0	0	0	0	75

Description: Flashing - Tar Paper
Location: Bldg. 7, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-203B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Flashing
Location: Bldg. 7, Ext.
Comments: Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-204	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Roofing - Paper
Location: Bldg. 7, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-204B	Brown	0	0	0	0	0	0	0	0	95	0	0	0	5

Description: Roofing - Paper
Location: Bldg. 7, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-204C	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 7, Ext.
Comments: Homogeneous Group.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-205	Black	25	0	0	0	0	0	0	0	0	0	0	0	75

Description: Flashing
Location: Bldg. 7, Ext.
Comments:
Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-205B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Flashing
Location: Bldg. 7, Ext.
Comments:
Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-01	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 14, Ext.
Comments: Homogeneous Group.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-01B	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 14, Ext.
Comments: Homogeneous Group.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-01C	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 14, Ext.
Comments: Homogeneous Group.
Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-01D	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roofing
Location: Bldg. 14, Ext.
Comments: Homogeneous Group.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-02	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roof Patch
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-02B	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roof Patch
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-02C	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Roof Patch
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-03	Black	25	0	0	0	0	0	0	0	0	0	0	0	75

Description: Penetration Compound
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-03B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Penetration Compound
Location: Bldg. 14, Ext.
Comments:
Analyzed: No

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-03C		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Penetration Compound
Location: Bldg. 14, Ext.
Comments: Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-04	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Flashing
Location: Bldg. 14, Ext.
Comments: Homogeneous Group. Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-04B	Black	10	0	0	0	0	0	10	0	10	0	0	0	70

Description: Flashing
Location: Bldg. 14, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-04C		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Flashing
Location: Bldg. 14, Ext.
Comments: Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-05	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Wrap
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-05B	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Wrap
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-06	Black	0	0	0	0	0	0	25	0	0	0	0	0	75

Description: Roofing
Location: Bldg. 14, Ext.
Comments: Only One layer Present.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-06B	Black	0	0	0	0	0	0	25	0	0	0	0	0	75

Description: Roofing
Location: Bldg. 14, Ext.
Comments: Only One layer Present.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-06C	Black	0	0	0	0	0	0	25	0	0	0	0	0	75

Description: Roofing
Location: Bldg. 14, Ext.
Comments: Only One layer Present.
Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-07	Black	25	0	0	0	0	0	0	0	0	0	0	0	75

Description: Sealant
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-07B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Sealant
Location: Bldg. 14, Ext.
Comments:
Analyzed: No

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-08	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Paper
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-08B	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-08C	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-09	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-09B	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-09C	Multi	0	0	0	0	0	0	45	0	0	0	0	0	55

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-10	Black	2	0	0	0	0	0	0	0	0	0	0	0	98

Description: Sealant
Location: Bldg. 14, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-10B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Sealant
Location: Bldg. 14, Ext.
Comments: Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-10C		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Sealant
Location: Bldg. 14, Ext.
Comments: Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-11	Gray	3	0	0	0	0	0	0	0	0	0	0	0	97

Description: Caulk
Location: Bldg. 14, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-11B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Caulk
Location: Bldg. 14, Ext.
Comments: Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-12	Silver	2	0	0	0	0	0	0	0	0	0	0	0	98

Description: Sealant
Location: Bldg. 14, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-12B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Sealant
Location: Bldg. 14, Ext.
Comments: Analyzed: No

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-13	Black	0	0	0	0	0	0	0	0	10	0	0	0	90

Description: Penetration Compound
Location: Bldg. 14, Ext.
Comments: Only One Layer Present.
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-13B	Black	3	0	0	0	0	0	0	0	0	0	0	0	97

Description: Penetration Compound
Location: Bldg. 14, Ext.
Comments: Only One Layer Present.
Is asbestos present? Yes. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-13C		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Penetration Compound
Location: Bldg. 14, Ext.
Comments:
Analyzed: No

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-14	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Fiberboard
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-14B	Brown	0	0	0	0	0	0	0	0	100	0	0	0	0

Description: Fiberboard
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-15	Black	0	0	0	0	0	0	0	5	0	0	0	0	95

Description: Compound
Location: Bldg. 14, Ext.
Comments:
Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-15B	Black	0	0	0	0	0	0	0	5	0	0	0	0	95

Description: Compound
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-15C	Black	0	0	0	0	0	0	0	5	0	0	0	0	95

Description: Compound
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-16	Black	0	0	0	0	0	0	20	0	0	0	0	0	80

Description: Shingle
Location: Bldg. 14, Ext.
Comments: Only One Layer Present. Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-17	Black	0	0	0	0	0	0	0	0	50	0	0	0	50

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-18	Gray	10	0	0	0	0	0	0	0	0	0	0	0	90

Description: Caulk
Location: Bldg. 14, Ext.
Comments: Is asbestos present? Yes. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-18B		0	0	0	0	0	0	0	0	0	0	0	0	0

Description: Caulk
Location: Bldg. 14, Ext.
Comments: Analyzed: No

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: B98956
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-502.1	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Tar Paper
Location: Bldg. 5, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112415B-5-B-502B.1	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Tar Paper
Location: Bldg. 5, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-203.1	Silver	0	0	0	0	0	0	0	0	0	0	0	0	100

Description: Silver Paint
Location: Bldg. 7, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-204.1	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Tar Paper
Location: Bldg. 7, Ext.
Comments: Homogeneous Group. Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-7-B-204B.1	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Tar Paper
Location: Bldg. 7, Ext.
Comments: Homogeneous Group. Is asbestos present? No. Analyzed: Yes

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-04.1	Black	0	0	0	0	0	0	0	0	25	0	0	0	75

Description: Tar Paper
Location: Bldg. 14, Ext.
Comments: Homogeneous Group. Is asbestos present? No. Analyzed: Yes

ProScience Analytical Services, Inc.

Client Name: GZA GeoEnvironmental, Inc., NH
PO #: N/A
Client Project #: 04.0045441.02
Client Reference: Amerbelle
Method: EPA/600/R-93/116

Batch: **B98956**
Date Sampled: Various
Date Received: 12/1/2015
Date Analyzed: 12/8/2015
Date of Report: 12/9/2015

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-15.1	Brown	0	0	0	0	0	0	0	0	80	0	0	0	20

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-15B.1	Brown	0	0	0	0	0	0	0	0	80	0	0	0	20

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

		Asbestos %						Non-Asbestos %						
Sample ID	Color	CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
112315B-14-B-15C.1	Brown	0	0	0	0	0	0	0	0	80	0	0	0	20

Description: Paper
Location: Bldg. 14, Ext.
Comments: Is asbestos present? No. Analyzed: Yes

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite
Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage.

Analyst: Patricia Weakley

ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one): 3 Hours 6 Hours Same Day Next Day | 2 Days 3 Days (5 Days) Other _____ | TAT in bus. days - lab approval required for rush analysis

PASI Batch # 198956

Client: GZA GeoEnvironmental

Address: 5 Commerce Park North, Suite 201, Bedford, NH 03110

Project #: 04.0045441.02 PO:

Project Site: Ameribelle

Contact: Steve Raymond, Andrew Pomeroy

Tel. / Fax #: 603-232-3600

Email: Stephen.raymond@gza.com, andrew.pomeroy@gza.com

PLM Chain of Custody

Stop on first positive*: (Yes) / No *If no selection is made the lab will analyze all samples

Special Instructions: * Layered Analysis

Relinquished By: [signature] Date/Time: 11/24/15; 1900

Received By Lab: Paula Leavitt-Lake Date/Time: 11/25/15 7:35AM

Shaded area for lab use only.

# of Samples Received: DT 96 105 Analyzed:

Results: email fax verbal By: H.W. KA 12-8 Date:

Analyst / Date: Patricia Drake 12/8/15 QC by / Date: Kyle Sun 12-8-15

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Asbestos Percentage (%) Circle Type: Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
1123158-13-B-401	11/23/15	Membrane and Paper, Ext	Ø	B K	W	M T	N																H/S 25				75
	B-401B		Ø	B K	W	M T	N																H/S 25				75
	B-401C		Ø	B K	W	M T	N																H/S 25				75
	B-402	Sealant	Ø	B K	W	M T	N																			100	
	B-402B		Ø	B K	W	M T	N																			100	

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

MD 12/8/15

Customer Name: GZA

Project Name/#: Amesbelle

PASI Batch # B989576

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Becke Line II	Becke Line ⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
112415 AST-1	11/24/15	Flashing Compound, AST Ext, *Layered Analysis	Ø	B K	N	M T	N	WP	+	L	N		SS	SS	25												75 *
N AST-1B		DNA *																									
112315 B-8	B-101	~~DNA~~ 12/8 MD Fiberboard Bldg 8 Ext	Ø	B R	N	S F	Y															HB					
	11/23/15																					95					5
	B-101B		Ø	B R	N	S F	Y															HB					
																						95					5
	B-101C		Ø	B R	N	S F	Y															HB					
																						95					5
	B-102	Paper	Ø	M C	N	M T	Y														I	HB					
																					25	25					50
	B-102B		Ø	M C	N	M T	Y														I	HB					
																					25	25					50
	B-102C		Ø	M C	N	M T	Y														I	HB					
																					25	25					50
	B-103	Glazing	Ø	T	N	H	N																				100
	B-103B		Ø	T	N	H	N	WP	+	L	N		SS	SS	75												100

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663

Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ver 4.4 Updated 11/18/15

* One layer Present.

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

12/8/15

Customer Name: GZA

Project Name/#: Annabelle

PASI Batch # B98956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	II	⊥	Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
112315B-8	B-103C	Glazing, Bldg 8, Ext	Ø	T	N	H	N	W	P	+	L	N	553	1550	2												98
	11/23/15																						HB				
112315B-2	B-301	* Layered Analysis	Ø	B	N	M	N																25				75 *
		Built up - Roofing, Bldg 2, Ext		K		T																	HB				
	301B		Ø	B	N	M	N																25				75 *
	301C		Ø	K	N	T	N																HB				
	302		Ø	B	N	M	N																25				75 *
		Fiberboard		R		F																	HB				
	302B		Ø	B	N	F	Y																95				5
	302C		Ø	R	N	F	Y																HB				
	303		Ø	B	N	F	Y																95				5
		Paper		M		M																	HB				
	303B		Ø	C	N	T	Y														I		25				50
				M		M															I		25				50
	303C		Ø	C	N	T	Y																HB				
																					I		25				50

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

* Only one layer present.

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RO 12/8/15

Customer Name: GZA

Project Name/#: Amerbelle

PASI Batch # B98956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Circle Type											
112315B-2-	B-304 11/23/15	Paper, Bldg 2, Ext	Ø	B R	N	F	Y																HB 95				5
	B-304B		Ø	B R	N	F	Y																HB 95				5
	304C		Ø	B R	N	F	Y																HB 95				5
	305	Sealant	Ø	B K	N	T	N																				100
	305B		Ø	B K	N	T	N																				100
	305C		Ø	B K	N	T	N																				100
	306	Flashing * Layered Analysis	25	B K	N	M T	N	W	P	+	L	W	SS3	SS0	45												55*
	306B	DNA																									
112415B-5-	B-501 11/24/15	Glazing, Bldg 5, Ext	Ø	T	N	H	N	W	P	+	L	W	SS3	SS0	5												95
	501B	DNA																									

Comments: Birefringence L= less than .010, M= .010-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ver 4.4 Updated 11/18/15

* ~~One~~ Only one layer present

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22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

Customer Name: GZA
Project Name/#: Amesbelle

PASI Batch # B98956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
112415B-5 -	B-502 11/24/15	Tar Roofing, Bldg 5, Ext * Layered Analysis	Ø	BK	N	T	N																				100
	502B	Tar	Ø	BK	N	T	N																				100
	503	Homasote	Ø	BR	N	F	Y																HB				
	503B		Ø	BR	N	F	Y																95				5
112315B-7-B	201 11/24/15	~~layer 1~~ pw 12/9 Roofing, Bldg 7, Ext * Layered Analysis	Ø	BK	N	M	N																HB				
	B-201B	~~layer 1~~ pw 12/9	Ø	BK	N	M	N																25				75*
	201C	~~layer 1~~ pw 12/9	Ø	BK	N	M	N																HB				
	202	Fiberboard	Ø	BR	N	F	Y																25				75*
	202B		Ø	BR	N	F	Y																HB				
	203	Tar paper Flashing * Layered Analysis	Ø	BK	N	M	N	WP	+	L	N	1.553	1.550		25								95				5

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03. Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

* Homogenous group

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

12/8/15

Customer Name: GZA

Project Name/#: Amerbelle

PASI Batch # 1398956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	II	⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
12315B-7	B203B 11/18/15	DNA Flashing, Bldg 7, Ext *Layered Analysis	Ø	B K	N N	M T	N N	2/3																			
	204	Paper Roofing *	Ø	B R	N	F	Y																HB 95				5
	204B	Paper *	Ø	B R	N	F	Y																HB 95				5
	204C	~~Layer 1~~ PLM 12/9 *	Ø	B K	N	M T	N																HB 25				25*
	205	Flashing	Ø	B K	N	M T	N	LO	P	+	L	N	1553	1550	25												25
	205B	DNA																									
12315B-14-B-01		~~Layer 1~~ PLM 12/9 *Layered Analysis Roofing, Bldg 14, Ext	Ø	B K	N	M T	N																HB 25				25*
	01B	~~Layer 1~~ PLM 12/9 *	Ø	B K	N	M T	N																HB 25				25*
	01C	~~Layer 1~~ PLM 12/9 *	Ø	B K	N	M T	N																HB 25				25*
	01D	~~Layer 1~~ PLM 12/9 *	Ø	B K	N	M T	N																HB 25				25*

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ver 4.4 Updated 11/18/15 * Homogenous Group.

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22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

RO 12/8/15

Customer Name: GZA

Project Name/#: Amerdale

PASI Batch # 1398956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
112345B-14-	B-01 11/23/15	Roof Patch, Bldg 14, Ext	Ø	BK	N	MI	N																HB				
	02B		Ø	BK	N	MT	N																25				75
	02C		Ø	BK	N	MT	N																HB				
	03	Penetration Compound	Ø	BK	N	MT	N	WP	+	+	L	N	1553	1550	25								25				75
	03B	DNA																									
	03C	DNA																									
	04	~~Layer 1~~ Flashing * Layered Analysis	Ø	BK	N	MT	N																HB				
	04B	Layer 1 *	Ø	BK	N	MT	N	WP	+	+	L	N	1553	1550	10						I		HB				
	04C	* DNA																			10		10				70
	05	Wrap	Ø	MC	N	MT	N														I 45						55

RJB 1/31 * * *

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.4 Updated 11/18/15 **Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).**

~~* Only One~~ RO 12/8 * Homogenous group.

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

RD 12/8/15

Customer Name: GtA

Project Name/#: Amesbelle

PASI Batch # B98956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Becke Line ∥	Becke Line ⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
11-23-B-14	-B-05B	Wrap, Bldg 14, Ext	Ø	M C	N	M T	N														I 45						55
	06	Roofing * Layered Analysis	Ø	B N K	N	M T	N														I 25						75 *
	06B	*	Ø	B K	N	M T	N														I 25						75 *
	06C	*	Ø	B K	N	M T	N														I 25						75 *
	07	Sealant	Ø	B K	N	M T	N	WP	+	L	N		1.553	1.559	25												75
	07B	DNA																									
	08	Paper	Ø	M C	N	M T	N														I 45						55
	08B		Ø	M C	N	M T	N														I 45						55
	08C		Ø	M C	N	M T	N														I 45						55
	09		Ø	M C	N	M T	N														I 45						55

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

* Only one layer present

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

Customer Name: 62A
Project Name/#: Ameribelle

PASI Batch # 1398956

11/23/15 10/12/8/15

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Becke Line ∥	Becke Line ⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Circle Type											
1123/15 B-14-B-	09 B	Paper, Bldg 14, Ext	Ø	M C	N	M T	N														L 45		H 10/8				55
	09C	↓	Ø	M C	N	M T	N														I 45						55
	10	Sealant	Ø	B K	N	M T	N	WP	+	L	N		1553	1550	2												98
	10B	↓ DNA																									
	10C	↓ DNA																									
	11	Caulk	Ø	G Y	N	H	N	WP	+	L	N		1553	1550	3												97
	11B	↓ DNA																									
	12	Sealant	Ø	S L	N	H	N	WP	+	L	N		1553	1550	2												98
	12B	↓ DNA																									
↓	13	Penetration Compound ↓ Only one layer present	0	B K	Y	T	N															1	HG 10				90

Layered Analysis

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

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22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

Customer Name: GZA
Project Name/#: Ammobelle

PASI Batch # B98956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Refractive Index II	Refractive Index ⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
															Circle Type												
112315B-14 -	B-13B 11/23/15	Penetration Compound, Bldg 14, GZA, Layered Analysis only one layer present	3	B K	Y	T	N	W	I	+	L	N	1.552	1.542	3												97
	13C	DNA																									
	14	Piberboard ~~Fiberboard~~	0	B R	Y	F	N																HB 100				0
	14B		0	B R	Y	F	N																HB 100				0
	15	Paper w/ Compound, Layered Analysis	0	B K	NP Y	P T	N															I 5					95
	15B		5 K 3	B K	NP Y	P T	N															I 5					95
	15C		0	B K	NP Y	P T	N															I 5					95
	16	Shingle only one layer present	0	B K	Y	T	N														IU 20						80
	17	Paper	0	B K	Y	S F	N																HB 50				50
	18	Caulk	3 K	G Y	Y	S	N	W	I	+	L	N	1.552	1.542	10												90

Comments: Birefringence L= less than .010, M= .011-.029 H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

Customer Name: GZA

Project Name/#: Hoosdale

PASI Batch # B98956

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	II	⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Circle Type											
112315B-14B 18B	11/23/15	Caulk, Bldg 14, Ext DNA																									

Comments: Birefringence L= less than .010, M= .011-.029 H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ProScience *Analytical Services, Inc.* www.proscience.net
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TAT (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days 5 Days Other _____; TAT in bus. days - lab approval required for rush analysis

PASI Batch # B98956

Client: GZA

PLM
Chain of Custody

Stop on first positive*: Yes / No (*If no selection is made the lab will analyze all samples)

Address:

Special Instructions:

Relinquished By: Date/Time:

Project #: PO: Received By Lab: Date/Time:

Project Site: Shaded area for lab use only.

Contact: # of SamplesReceived: Analyzed:

Tel. / Fax #: Results: email fax verbal By: Date:

Email: Analyst / Date: Tatiana Wash, 12/8/15 QC by / Date:

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Asbestos Percentage (%): Chrysotile	Circle Type: Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
502.1		Tar paper	Ø	B K	N	T	N																HB 25				75
502B.1		Tar paper	Ø	B K	N	T	N																HB 25				75
203.1		Silver paint	Ø	S I	N	P T	N																				100
204.1		Tar paper	Ø	B K	N	T	N																HB 25				75*
204B.1		Tar paper	Ø	B K	N	T	N																HB 25				75*
04.1		Tar paper	Ø	B K	N	T	N																HB 25				75*

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.3 Updated 1/29/14 * Homogenous group

Page Of

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ProScience *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

TAT (circle one)
3 Hours 6 Hours Same Day Next Day
2 Days 3 Days 5 Days Other _____
TAT in bus. days - lab approval required for rush analysis

PASI Batch # B98956

Client: GZA

PLM
Chain of Custody

Stop on first positive*: Yes / No *If no selection is made the lab will analyze all samples

Address:

Special Instructions:

Relinquished By: Date/Time:

Project #: PO: Received By Lab: Date/Time:

Project Site:

Shaded area for lab use only.

Contact: # of SamplesReceived: Analyzed:

Tel. / Fax #: Results: email fax verbal By: Date:

Email: Analyst / Date: *QC by / Date:*

Sample ID	Date Sampled	Description / Location	Stereo Scope: SSAPE	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
15.1		Paper	Ø	BR	Y	F	N																HB				20
																							80				
15B.1		Paper	Ø	BR	Y	F	N																HB				20
																							80				
15C.1		Paper	Ø	BR	Y	F	N																HB				20
																							80				

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).

ATTACHMENT I
DRAFT PERMIT APPLICATIONS

Connecticut Department of Energy & Environmental Protection

CPPU USE ONLY
App #:
Doc #:
Check #:

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: Applicant Information:

- ***If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated ***exactly*** as it is registered with the Secretary of State.***
- *If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).*

Applicant: **Town of Vernon**

Mailing Address: **55 West Main Street**

City/Town: **Vernon** State: **CT** Zip Code: **06066**

Business Phone: **860-870-3663** ext.:

Contact Person: **David Smith** Phone: **860-870-3663** ext.

E-Mail: **dasmith@vernon-ct.gov**

Applicant (check one): ☐ individual ☐ *business entity ☐ federal agency ☐ state agency ☒ municipality ☐ tribal

*If a business entity, list type (e.g., corporation, limited partnership, etc.):

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.

Please provide the following information to be used for *billing purposes only*, if different:

Company/Individual Name:

Mailing Address:

City/Town: State: Zip Code:

Contact Person: Phone: ext.

Part II: Project Information

Brief Description of Project: *(Example: Development of a 50 slip marina on Long Island Sound)*

As part of the redevelopment of the former Amerbelle Mill (a Brownfield project), the Paper Mill Pond Dam is being removed and reconstructed at a location 250 feet upstream of its existing location.

Location (City/Town): **Vernon, CT**

Other Project Related Permits (*not* included with this form):

Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review ☐ Revision ☐ minor mod	$940.00			1 + 0
	Title V Operating Permits ☐ Revision ☐ minor mod ☐ non-minor mod	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	$1300.00			1 + 1
	To Sanitary Sewer (POTW)	$1300.00			1 + 1
	To Surface Water (NPDES)	$1300.00			1 + 1
	INLAND WATER RESOURCES-				
New	Dam Safety	none	1	none	1 + 2
	Flood Management Certification	none			1 + 1
	Inland Wetlands and Watercourses	none			1 + 5
	Inland 401 Water Quality Certification	none			
	FERC- Hydropower Projects- 401 Water Quality Certification	none			1 +1
	Water Diversion	★			1 + 5
	OFFICE OF LONG ISLAND SOUND PROGRAMS				
	Certificate of Permission	$375.00			1 + 2
	Coastal 401 Water Quality Certification	none			1 + 2
	Structures and Dredging/and Fill/Tidal Wetlands	$660.00			1 + 2
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Disruption of a Solid Waste Disposal Area	$0			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	$100.00			1 + 0
	Stewardship	$4000.00			1 + 1
	Solid Waste Facilities	★			1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡	1	0	

GENERAL PERMITS and AUTHORIZATIONS			
Enter subtotals from Part IV, pages 3 - 6 of this form	Subtotals Page 3 &4 ➡	1	0
	Subtotals Page 5 ➡	1	0
	Subtotals Page 6 ➡	1	0
	TOTAL ➡	1	0

☐ Indicate whether municipal discount or state waiver applies. Less Applicable Discount ➡

AMOUNT REMITTED ➡ 0

Check # ➡ _____

Check or money order should be made payable to: "Department of Energy and Environmental Protection"

★ See fee schedule on individual application.

Part IV: General Permit Registrations and Requests for Other Authorizations Application and Fee Information

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
☐	Limit Potential to Emit from Major Stationary Sources of Air Pollution	$2760.00			1 + 0
☐	Diagnostic and Therapeutic X-Ray Devices (Medical X-Ray) Registration	$190.00/Xray device			1 + 0
☐	Radioactive Materials and Industrial Device Registration (Ionizing Radiation)	$200.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	License Revocation Request	$0			★★
☐	Other, (please specify):				
	WATER DISCHARGES				
☐	Boiler Blowdown Wastewater	Expired- wastewater discharge authorized under MISC GP			
☐	Categorical Industry User to a POTW Discharges > 10,000 gpd Discharges < 10,0000 gpd	 $6250.00 $3125.00			 1 + 0
☐	Domestic Sewage	$625.00			1 + 0
☐	Food Preparation Establishment Wastewater	No Registration			
☐	Food Processing Wastewater	$500.00			1 + 0
☐	Groundwater Remediation Wastewater to a Sanitary Sewer	$500.00			1 + 0
☐ ☐	Groundwater Remediation Wastewater to a Surface Water Registration Only Approval of Registration by DEEP	 $625.00 $1250.00			 1 + 0
☐ ☐	Hydrostatic Pressure Testing Wastewater Registration Only Approval of Registration by DEEP (natural gas pipelines)	 $625.00 $1250.00			 1 + 0
☐ ☐	Miscellaneous Discharges of Sewer Compatible Wastewater Registration Only Approval of Registration by DEEP	 $500.00 $1000.00			 1 + 0
☐	Nitrogen Discharges	No Registration			
☐	Non-Contact Cooling and Heat Pump Water (Minor)	$625.00			1 + 0
☐	Photographic Processing Wastewater (Minor)	Expired- wastewater discharge authorized under MISC GP			
☐	Point Source Discharges from Application of Pesticides	$200.00			1 + 0
☐	Printing & Publishing Wastewater (Minor) Flow < 40 gpd	$500.00 $100.00			1 + 0
☐	Stormwater Associated with Commercial Activities	$300.00			1 + 0
☐	Stormwater Associated with Industrial Activities <50 employees–see general permit for additional requirements >50 employees–see general permit for additional requirements	 $500.00 $1000.00			 1 + 0
☐	Stormwater & Dewatering Wastewaters-Construction Activities	★			1 + 0
☐	Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	$250.00			1 + 0

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

WATER DISCHARGES (continued)				
☐ Subsurface Sewage Disposal Systems Serving Existing Facilities	★★			1 + 0
☐ Swimming Pool Wastewater - Public Pools and Contractors	$500.00			1 + 0
☐ Tumbling or Cleaning of Parts Wastewater (Minor)	Expired- wastewater discharge authorized under MISC GP			
Vehicle Maintenance Wastewater ☐ Registration Only ☐ Approval of Registration by DEEP	 $625.00 $1250.00			1 + 0
☐ Water Treatment Wastewater	$625.00			1 + 0
☐ Emergency/Temporary Authorization - Discharge to POTW	$1500.00			1 + 0
☐ Emergency/Temporary Authorization - Discharge to Surface Water	$1500.00			1 + 0
☐ Emergency/Temporary Authorization - Discharge to Groundwater	$1500.00			1 + 0
☐ Other, (please specify):				
Note: Carry subtotals over to Part III, page 2 of this form. Subtotal ➡		1	0	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	AQUIFER PROTECTION PROGRAM				
☐	Registration for Regulated Activities	$625.00			1 + 0
☐	Permit Application to Add a Regulated Activity	$1250.00			1 + 0
☐	Exemption Application from Registration	$1250.00			1 + 0
	INLAND WATER RESOURCES				
☐	Diversion of Remediation Groundwater	No Registration			
☐	Diversion of Water for Consumptive Use: Reauthorization Categories	$1000.00			1 + 2
☐	Diversion of Water for Consumptive Use: Authorization Required	$2500.00			1 + 4
☐	Diversion of Water for Consumptive Use: Filing Only	$1500.00			1 + 4
☐	Programmatic General Permit	★			1 +3
☐	Water Resource Construction Activities	★			1 +0
☐	Emergency/Temporary Authorization	★★			★★
☐	Notice of High Hazard Dam or a Significant Hazard Dam	$0			1 +0
☐	Other, (please specify):				
	OFFICE OF LONG ISLAND SOUND PROGRAMS				
☐	4/40 Docks	$700.00			1 + 1
☐	Beach Grading	$100.00			1 + 1
☐	Buoys or Markers	No Registration			
☐	Coastal Remedial Activities Required by Order	$700.00			1 + 1
☐	Dock Reconstruction	$300.00			1 + 1
☐	Harbor Moorings	No Registration			
☐	Maintenance of Catch Basins and Tide Gates	No Registration			
☐	Marina and Mooring Field Reconfiguration	$700.00			1 + 1
☐	Minor Seawall Repair	No Registration			
☐	Non-harbor Moorings	$100.00			1 + 1
☐	Osprey Platforms and Perch Poles	none			1 + 1
☐	Pump-out Facilities (no fee for Clean Vessel Act grant recipients)	$100.00			1 + 1
☐	Programmatic General Permit	★			1 + 1
☐	Removal of Derelict Structures	$100.00			1 + 1
☐	Residential Flood Hazard Mitigation	$100.00			1 + 1
☐	Swim Floats	$100.00			1 + 1
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡	1	0	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	WASTE MANAGEMENT				
☐	Addition of Grass Clippings at Registered Leaf Composting Facilities	$500.00			1 + 0
☐	Beneficial Use Determination	★			1 + 0
	Certain Recycling Facilities:				
☐	Drop-site Recycling Facility	$200.00			1 + 0
☐	Limited Processing Recycling Facility	$500.00			1 + 0
☐	Recyclables Transfer Facility	$500.00			1 + 0
☐	Single Item Recycling Facility	$500.00			1 + 0
☐	Collection and Storage of Post Consumer Paint	$0			1 + 0
	Contaminated Soil and/or Staging Management (Staging/Transfer)				
☐	New Registrations	$250.00			1 + 0
☐	New Approval of Registrations	$1500.00			1 + 0
☐	Renewal of Registrations	$250.00			1 + 0
☐	Renewal of Approval of Registrations	$750.00			1 + 0
☐	Connecticut Solid Waste Demonstration Project	$1000.00			1 + 0
☐	Disassembling Used Electronics	$2000.00			1 + 0
☐	Leaf Composting Facility	none			1 + 1
☐	Municipal Transfer Station	$800.00			1 + 1
☐	One Day Collection of Certain Wastes and Household Hazardous Waste	$1000.00			1 + 0
☐	Sheet leaf Composting Notification	$0			★★
	Special Waste Authorization				1 + 0
☐	Landfill or RRF Disposal	$660.00			
☐	Asbestos Disposal	$300.00			
☐	homeowner	$0			
☐	Storage and Processing of Asphalt Roofing Shingle Waste	$2500.00			1 + 0
☐	Storage and Processing of Scrap Tires for Beneficial Use	$1250.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	REMEDIATION				
☐	In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
☐	In Situ Groundwater Remediation: Chemical Oxidation	$500.00			1 + 0
☐	Emergency/Temporary Authorization	★			★★
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡	1	0	

★See fee schedule on registration/application.

★★Contact the specific permit program for this information.
(Contact numbers are provided in the instructions)

Affirmative Action, Equal Employment Opportunity and Americans with Disabilities

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). Please contact us at (860) 418-5910 or deep.accommodations@ct.gov if you: have a disability and need a communication aid or service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint.

Permit Application for Programs Administered by the Inland Water Resources Division

Please complete this application form in accordance with the instructions (DEP-IWRD-INST-100) in order to ensure the proper handling of your application. Print or type unless otherwise noted. You must submit the *Permit Application Transmittal Form* (DEP-APP-001) and the initial fee along with this form.

DEP USE ONLY

Part I: Application Type

Check the appropriate box identifying the application type.

This application is for (check one):	Please identify any previous or existing permit/authorization/registration number in the space provided.
☒ A *new* application	Existing permit/authorization/registration number:
☐ A *renewal* of an existing permit	
☐ A *modification* of an existing permit	Expiration Date:

Part II: Permit Type and Fee Information

Please note: effective August 21, 2003, the application fees for the programs administered by the Inland Water Resources Division have increased as listed in the following table. The fee for municipalities is 50% of the listed rates.

Type of Permit (check *all* that apply):	Fee to submit with application:
☐ **Inland Wetlands & Watercourses** CGS Sec. 22a-36 et seq.	none
☒ **Dam Construction** *CGS Sec. 22a-403*	none
☐ **401 Water Quality Certificate** *33 U.S.C. 1341*	none
☐ **Flood Management Certification** *CGS Sec. 25-68(b) - (h)*	none
Stream Channel Encroachment *CGS Sec. 22a-342*	
☐ No change in grade and no construction of above-ground structures	$470.00
☐ A change in grade and no construction of above-ground structures	$940.00
☐ A change in grade and above-ground structures or buildings	$4,000.00
Water Diversion: Consumptive Use *CGS Sec. 22a-372(e)*	
☐ Withdrawal > 0.05 and < 0.5 mgd	$2,050.00
☐ Withdrawal ≥ 0.5 and < 2.0 mgd	$4,000.00
☐ Withdrawal ≥ 2.0 mgd	$6,250.00
Water Diversion: Nonconsumptive Use *CGS Sec. 22a-372(e)*	
☐ Watershed < 0.5 sq mi	$2,050.00
☐ Watershed ≥ 0.5 sq mi and < 2.0 sq mi	$4,000.00
☐ Watershed ≥ 2.0 sq mi	$6,250.00

Part III: Applicant Information

1. Fill in the name of the applicant(s) as indicated on the *Permit Application Transmittal Form* (DEP-APP-001):

   Applicant: **Town of Vernon**

   Phone: **860-870-3663** ext. Fax: **860-870-3683**

   ☐ Check here if there are co-applicants. If so, label and attach additional sheet(s) with the required information to this sheet.

2. Applicant's interest in property at which the proposed activity is to be located:

   ☒ site owner ☐ option holder ☐ lessee

   ☐ easement holder ☐ operator ☐ other (specify):

3. List primary contact for departmental correspondence and inquiries, if different than the applicant.

   Name: **David Smith**

   Mailing Address: **55 West Main Street**

   City/Town: **Vernon** State: **CT** Zip Code: **06066**

   Business Phone: **860-870-3663** ext. Fax: **860-870-3664**

   Contact Person: **David Smith** Title: **Vernon Town Engineer**

4. List attorney or other representative, if applicable:

   Firm Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Attorney:

5. Facility or Property Owner, if different than the applicant:

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Contact Person: Title:

   Home address of owner (for Inland Wetlands applications only):

   Mailing Address:

   City/Town: State: Zip Code:

   Home Phone:

Part III: Applicant Information (continued)

6. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the application or in designing or constructing the activity. ☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Name: **GZA GeoEnvironmental, Inc.**

Mailing Address: **249 Vanderbilt Avenue**

City/Town: **Norwood** State: **MA** Zip Code: **02062**

Business Phone: **781-278-3818** ext. Fax: **781-278-5701**

Contact Person: **Peter Baril** Title: **Dam Engineer/Principal**

Service Provided: **Engineering consulting services**

Part IV: Site Information

1. **Site Location:**

a. Name of facility, if applicable: **Paper Mill Pond Dam at the Former Amerbelle Mill**

Street Address or Description of Location: **104 East Main Street**

City/Town: **Vernon** State: **CT** Zip Code: **06066**

Project No., if applicable:

b. Tax Assessor's Reference: Map **40** Block **0117** Lot **00006**

(Assessor's reference is not required if requester is an agency of the State of Connecticut.)

c. Latitude and Longitude of the approximate "center of the site" in *degrees, minutes, and seconds*:

Latitude: **41° 52' 00" N** Longitude: **72° 26' 33" W**

Method of determination (check one):

☐ GPS ☒ USGS Map ☐ Other (please specify):

If a USGS Map was used, provide the quadrangle name: **ArcGIS USA Topo Maps (no quad name)**

d. Drainage Basin number(s) wherein the proposed activity will take place: **4500-00-1**

e. Flood Insurance Rate Map Panel Number: **09003C0425F**

Date of the map referenced: **9/26/2008**

f. If applying for a SCEL permit, identify the property wherein the proposed activity will take place by indicating the following:

SCEL Map number(s):

Property Identifier:

Date of the map referenced:

2. COASTAL BOUNDARY: Is the activity which is the subject of this application located within the coastal boundary as delineated on DEP approved coastal boundary maps? ☐ Yes ☒ No

If yes, and this application is for a new permit or for a modification of an existing permit, you must submit a *Coastal Consistency Review Form* (DEP-APP-004) with your application as Attachment P.

Information on the coastal boundary is available at the local town hall or on the "Coastal Boundary Map" available at DEP Maps and Publications (860-424-3555).

Part IV: Site Information (continued)

3. ENDANGERED OR THREATENED SPECIES: Is the project site located within an area identified as a habitat for endangered, threatened or special concern species as identified on the "State and Federal Listed Species and Natural Communities Map"? ☐ Yes ☒ No Date of Map: **Sept. 2015**

If yes, complete and submit a *Connecticut Natural Diversity Data Base* (CT NDDB) *Review Request Form* (DEP-APP-007) to the address specified on the form. **Please note NDDB review generally takes 4 to 6 weeks and may require additional documentation from the applicant. DEP strongly recommends that applicants complete this process before submitting the subject application.**

When submitting this application form, include copies of any correspondence to and from the NDDB, including copies of the completed *CT NDDB Review Request Form*, as Attachment K (Environmental Report) or in Attachment Q if no environmental report is required.

For more information visit the DEP website at www.ct.gov/dep/endangeredspecies (Review/Data Requests) or call the NDDB at 860-424-3011.

4. AQUIFER PROTECTION AREAS: Is the site located within a town required to establish Aquifer Protection Areas, as defined in section 22a-354a through 354bb of the General Statutes (CGS)?

☒ Yes ☐ No

If yes, is the site within an area identified on a Level A or Level B map? ☐ Yes ☒ No

To view the applicable list of towns and maps visit the DEP website at www.ct.gov/dep/aquiferprotection

To speak with someone about the Aquifer Protection Areas, call 860-424-3020.

5. CONSERVATION OR PRESERVATION RESTRICTION: Is the property subject to a conservation or preservation restriction? ☐ Yes ☒ No

If Yes, proof of written notice of this application to the holder of such restriction or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction, must be submitted as Attachment Q.

6. Other Permits: List any previous federal, state or local permits or certificates that have already been issued for the site or for the proposed activity:

Type or Nature of Permit	Permit No. Issuing Authority	Date Issued	Expiration Date	Permittee Name

Part V: Supporting Documents

Please check the attachments submitted as verification that *all* applicable attachments have been submitted with this application form. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include the applicant's name as indicated on the *Permit Application Transmittal Form*. The specific information required in each attachment is described in the *Instructions for Completing A Permit Application for Inland Water Resources Division Activities* (DEP-IWRD-INST-100).

☒	Attachment A:	Executive Summary
☒	Attachment B:	An 8 1/2" x 11" copy of a United States Geological Survey (USGS) Topographic Quadrangle Map (scale: 1:24,000) with the regulated activity or project site outlined or pinpointed, as appropriate.
☐	Attachment C:	*Documentation Form for: Inland Wetlands and Watercourses Permit, Stream Channel Encroachment Line Permit, and 401 Water Quality Certification* (DEP-IWRD-APP-101)

Part V: Supporting Documents (continued)

☐ Attachment D: *Documentation Form for Water Diversion Permit* (DEP-IWRD-APP-102)

☒ Attachment E: *Documentation Form for a Dam Construction Permit* (DEP-IWRD-APP-103)

☐ Attachment F: *Documentation Form for Flood Management Certification* (DEP-IWRD-APP-104) (State Agencies Only)

☒ Attachment G: Plan Sheets and Drawings

☒ Attachment H: Engineering Documentation

Part 1: *Engineering Report Checklist* (DEP-IWRD-APP-105A) and an Engineering Report

Part 2: *Hydrologic and Hydraulic Consistency Worksheet* (DEP-IWRD-APP-105B)

Section I: Floodplain Management

Section II: Stormwater Management

For state agencies only:

Section III: State Grants and Loans

Section IV: Disposal of State Land

☒ Attachment I: Flood Contingency Plan

☒ Attachment J: Soil Scientist Report (not required for Flood Management Certification)

☒ Attachment K: Environmental Report (not required for Flood Management Certification)

☒ Attachment L: Mitigation Report - wetlands and watercourses, fish and wildlife (not required for Flood Management Certification)

☒ Attachment M: Alternatives Assessment (not required for Flood Management Certification)

☒ Attachment N: *Applicant Compliance Information Form* (DEP-APP-002) (not required for Flood Management Certification or 401 Water Quality Certification Approvals)

☒ Attachment O: *Applicant Background Information Form* (DEP-APP-008) (not required for Flood Management Certification)

☐ Attachment P: *Coastal Consistency Review Form* (DEP-APP-004) (if applicable)

☐ Attachment Q: Other Information: any other information the applicant deems relevant or is required by DEP.

Number of Copies of Application:

Submit one original of all application forms, certifications, reports and supporting documents and the number of photocopies of all such materials as noted on the *Permit Application Transmittal Form*. When applying for more than one permit, you should submit the original and no more than six copies.

Part VI: Application Certification

The applicant *and* **all** individuals responsible for actually preparing the application or supporting documentation must sign this part. An application will be considered insufficient unless **all** required signatures are provided. You must include signatures of any person preparing any report or parts thereof filed in support of this application (i.e., professional engineers, surveyors, soil scientists, biologists, environmental and other consultants, etc.).

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that I will comply with all notice requirements as listed in Section 22a-6g of the General Statutes."

Signature of Applicant	Date
David Smith	**Vernon Town Engineer**
Name of Applicant (print or type)	Title (if applicable)
Signature of Preparer (if different than above)	Date
Peter Baril or GZA GeoEnvironmental, Inc.	**Dam Engineering/Principal**
Name of Preparer (print or type)	Title (if applicable)

☐ Check here if additional signatures are required.

If so, please reproduce this sheet and attach signed copies to this sheet.

Reminder: After submitting this application to DEP, except in the case of a Flood Management Certification, you must publish a notice of the application immediately and submit a certified copy of this published notice to DEP. See "Notice of Permit Application" section in the instructions (DEP-IWRD-INST-100).

List the name of the newspaper the Notice of Permit Application will be published in: **Hartford Courant**

Note: Please submit the *Permit Application Transmittal Form*, Application Form, Fee, and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT A

EXECUTIVE SUMMARY

ATTACHMENT A
EXECUTIVE SUMMARY

Relocation of the Paper Mill Pond Dam
Vernon, CT

On behalf of Town of Vernon, GZA GeoEnvironmental, Inc. (GZA) is submitting a CTDEEP Dam Construction Permit application for the proposed relocation of the Paper Mill Pond Dam. Paper Mill Pond Dam is located at the former Amerbelle Mill at North Main Street in Vernon, Connecticut. A locus plan is included at Figure 1. The Town of Vernon (dam owner) has received funding from the Connecticut Remedial Action and Redevelopment Municipal Grant Program, provided by the State of Connecticut Department of Economic and Community Development (DECD), to facilitate redevelopment and reuse of the site for commercial use. The project is one of twelve brownfield redevelopment projects in the state to receive funding from the grant. The dam is being relocated a couple hundred feet upstream to facilitate the redevelopment and reuse of the mill site.

The Upper Hockanum River flows from southeast to northwest through the Amerbelle Mill complex in a combined reinforced concrete and stone-lined rectangular raceway. The majority of the raceway runs beneath buildings. Upstream of the site the river forms Paper Mill Pond. The river enters the mill site after it passes underneath Grove Street. Refer to Figure 2 for an orthophoto site map. The Paper Mill Pond Dam is located within the raceway inside a courtyard surrounded by mill buildings. After the river exits the mill site, it discharges into Anocoil (aka American Mill) Pond, which is impounded by Anocoil Dam (aka Hockanum Reservoir Dam).

The existing Paper Mill Pond Dam (CTDEEP #14606) is classified as Class C (High Hazard). Based on the Phase I report (published by the USACE in March, 1981), the existing dam includes an approximate 17 foot long concrete spillway and a concrete platform for outlet works control. The spillway crest elevation and platform elevation are 473.2 feet and 478.7 feet, respectively (NAVD88). The height of the spillway and platform are 11.2 feet and 16.7 feet, respectively. Stone and concrete building foundations form the abutments at each end of the dam. The spillway has a low-level outlet of believed to be 48-inches in diameter. The spillway controls the hydraulic head of the raceway upstream of the dam and the Paper Mill Pond.

Proposed Construction Activities

This permit application includes a set of drawings (Attachment G) which describes the proposed reconstruction of the dam. The proposed construction includes the following:

1. Removal of the dam at its current location, which will be performed with demolition of the surrounding buildings;
2. Reconstruction/relocation of the dam about 250 feet upstream of the existing location. This location is still within the raceway and within the limits of the former mill complex. The proposed dam is a reinforced concrete ogee weir with a low level outlet gate on the right. The proposed dam is composed of a 20-foot long spillway at crest elevation 473.2 feet. The proposed spillway height is 3.7 feet. The dam will be constructed in two phases. In Phase I, a cofferdam will be constructed upstream with

outlet by-pass pipes to route flow through the left side of the channel. The right side of the dam will be constructed. In Phase II, the outlet by-pass pipes will be placed to route streamflow through the newly constructed 4ft. x 4ft. low-level outlet slide gate, on the right side of the channel. The left side of the dam will be constructed.

No permanent alterations of wetlands or watercourses are anticipated as a result of the relocation of Paper Mill Pond Dam. The existing and proposed dam have the same spillway crest elevation (473.2 feet) and similar lengths. For construction activities, the existing Paper Mill Pond Dam low-level outlet will be fully opened to allow the pond elevation to reach the minimum of its normal operating level. The cofferdam upstream of Grove Street will be constructed before the removal of the existing dam to maintain control of the pond level during the relocation of the dam.

Engineering Analyses

Hydrologic and Hydraulic (H&H) computations and modeling were conducted for the design and are included in Attachment H. The crest of the new spillway will be at the same elevation as the former structure. Thus, there will be no appreciable change in the hydraulic characteristics within the raceway or at Paper Mill Pond.

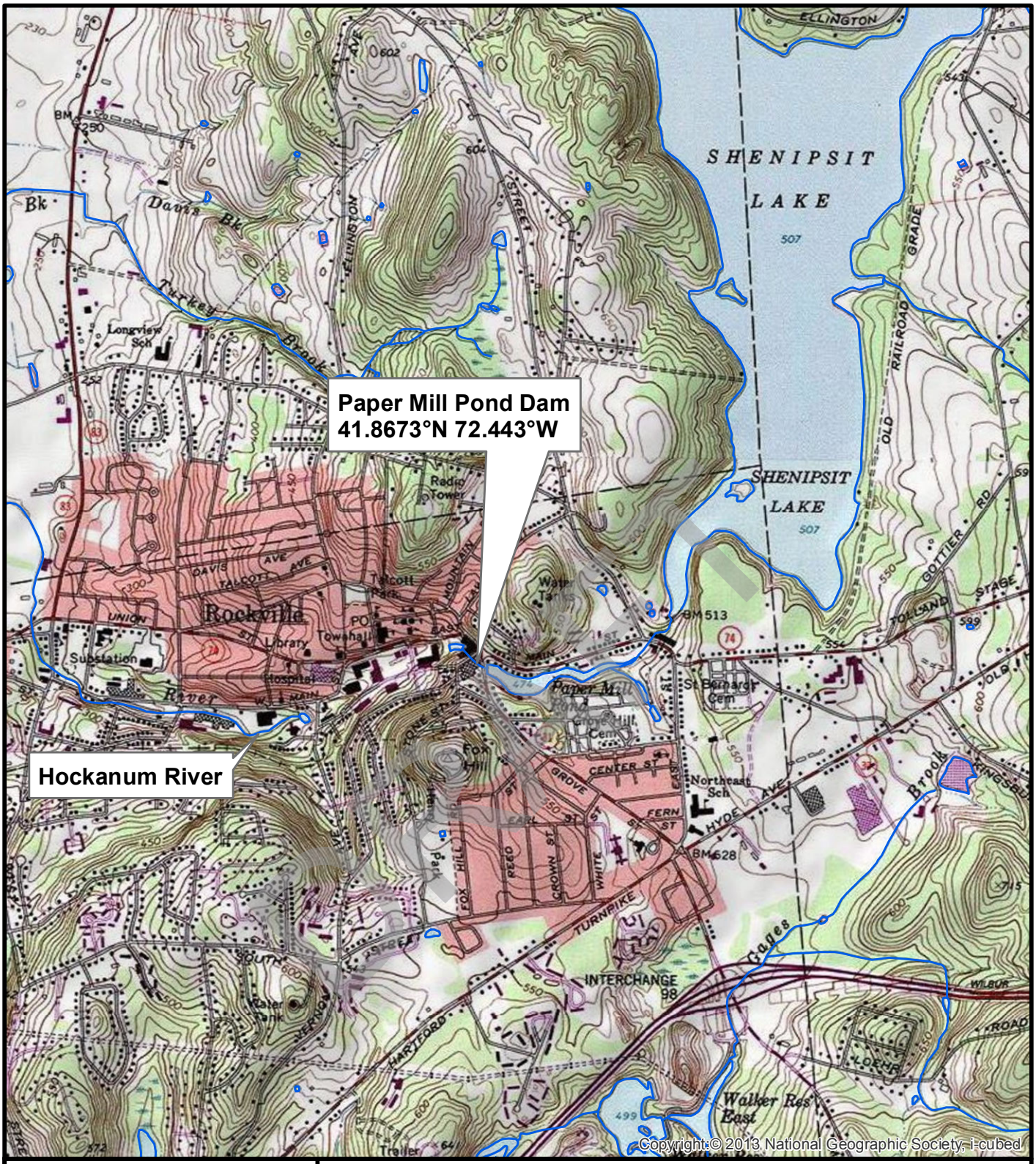
Construction Schedule

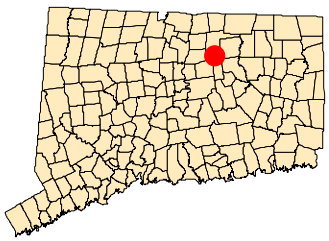
The demolition of the Amerbelle site is currently anticipated to begin in April of 2016. The dam removal and construction will be performed once demolition is complete, likely in August of 2016.

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT B

LOCUS MAPS





0 1,000 2,000 4,000 Feet

Basemap from ESRI USA Topo Maps

N W E S

J:\Branch\NORWOOD\PHB\Amerbelle Vernon CT Paper Mill Pond Dam\Figures\GIS\mxd\Locus.mxd

GZA

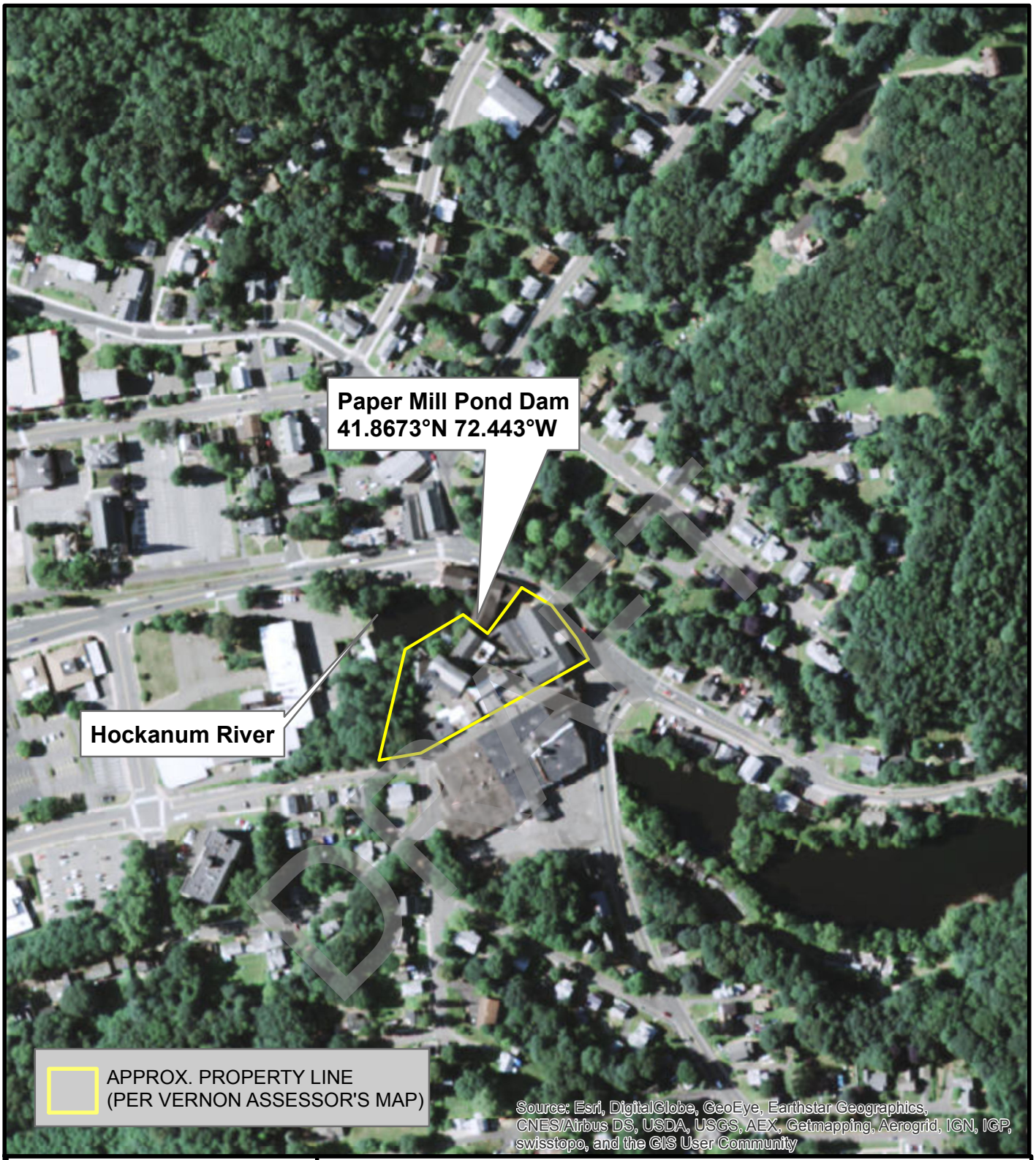
PROJ. MGR.: PHB
DESIGNED BY: CES
REVIEWED BY: PHB
OPERATOR: CES
DATE: 02/2/2016

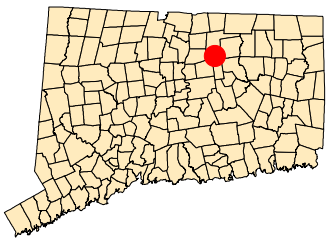
LOCUS MAP
PAPER MILL POND DAM, CT DEEP #14606

FORMER AMERBELLE MILL
TOWN OF VERNON, CONNECTICUT

JOB NO.
05.0045441.01

FIGURE NO.
1





0 250 500 1,000 Feet

N W E S

Basemap from ESRI World Imagery Maps

PROJ. MGR.: PHB
DESIGNED BY: CES
REVIEWED BY: PHB
OPERATOR: KCM
DATE: 02/2/2016

AERIAL PHOTOGRAPH
PAPER MILL POND DAM, CT DEEP #14606

FORMER AMERBELLE MILL
TOWN OF VERNON, CONNECTICUT

JOB NO. 05.0045441.01

FIGURE NO. 2

J:\Branch\NORWOOD\PHB\Amerbelle Vernon CT Paper Mill Pond Dam\Figures\GIS\mxd\Aerial.mxd

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT E

DOCUMENTATION FORM FOR A DAM CONSTRUCTION PERMIT

Attachment E: Documentation Form for a Dam Construction Permit (CGS Section 22a-403)

Applicants should review the application instructions (DEP-IWRD-INST-100) and CGS Sections 22a-401 through 22a-411.

1. Applicant Name: **Town of Vernon**
   (as indicated on the *Permit Application Transmittal Form*)

2. Name of watercourse affected by dam: **Upper Hockanum River**

   Name of dam: **Paper Mill Pond Dam**

   Name of impoundment: **Paper Mill Pond**

   CT Dam Inventory Number, if known: **14606**

3. Description of proposed activity:

   ☐ New construction ☐ Repair ☒ Modification ☐ Removal

4. Description of the proposed/current uses of the proposed/existing dam and impoundment:

   The Paper Mill Pond Dam is currently located in a vacant property that was the Amerbelle Mill. Its impoundment, Paper Mill Pond, borders a variety of industrial, commercial, and residential properties as well as a cemetary. The impoundment currently serves as a recreational and aesthetic resource. The Town of Vernon plans to redevelop the mill site for commerical use. The reconstructed dam and repaired raceway will serve as an aesthetic resource and general amenity to the commerical site. The new dam replaces the existing, poor condition dam located about 250 feet further downgradient. The new dam will have a similar slide gate to assist in the control of the pond level during normal seasonal flows.

Attachment E: Documentation Form (continued)

5. Characteristics of proposed or existing impoundment:

   a. Surface area: **8** acres

   b. Drainage area: **16.5** (check one): ☐ acres or ☒ square miles

   c. Volume at spillway height: **40** (check one): ☒ acre-feet or ☐ cubic feet

   d. Volume at top of dam: **40** (check one): ☒ acre-feet or ☐ cubic feet

6. Characteristics of proposed or existing dam:

   a. Maximum height at centerline: **Proposed - 3.7** feet

   b. Total length: **Proposed - 28** feet

7. Characteristics of proposed or existing spillway:

   a. Type: **Reinforced Concrete Ogee**

   b. Capacity: **1,150** cubic feet/second (cfs) at design storm elevation

      1,150 cfs at top of dam

   c. Length: **20** feet

   d. Height above stream bed: **3.7** feet

   e. Amount of freeboard: **0** feet

   f. Existing water surface elevation: **474** feet NGVD

   g. Historic water surface elevation: **474** feet NGVD

      Historic water surface elevation maintained until: **2016** (year)

      Provide documentation supporting historic data as Attachment E7g.

   h. Proposed water surface elevation: **474** feet NGVD

8. Type of proposed or existing construction:

   a. Dam:

      The proposed dam will be located in the raceway 10 feet downstream of the Grove Street Bridge. The race channel is 29.1 feet wide at this location. The dam is a 20 foot long spillway adjacent to a 4 foot by 4 foot gate that is supported by a concrete platform. The concrete platform is about 9 feet long (perpendicular to flow).

   b. Dike:

Attachment E: Documentation Form (continued)

8. c. Spillway:

The proposed spillway will be located 10 feet downstream of the Grove Street Bridge within the raceway channel. The proposed spillway is a reinforced concrete ogee weir that is 20 feet long and with a crest elevation at 473.2 feet NAVD88. Downstream of the spillway is planned a reinforced concrete apron followed by riprap. The exposed volume (above the raceway bed) of the spillway is about 16 CY.

9. Hydraulic factors:

   a. Spillway design storm (return frequency, e.g., 100 yr., ½ PMF, PMF, Other): **100 yr**

   b. Design storm duration: **steady state (FEMA)** hours.

   c. Peak inflow: **1,150** cfs

   d. Peak outflow: **1,150** cfs

   e. Impoundment elevation at peak outflow: **480.0** feet

10. Use of fill material:

    Will fill material be placed in a watercourse or in wetlands? ☒ Yes ☐ No

    If Yes, the volume to be placed is: **16** cubic yards and the area to be filled is: **0.012** acres.

    The fill must be delineated on application plans submitted as Attachment G.

11. Rate of flow to be passed on an uninterrupted instantaneous basis through the dam during filling or refilling is: **N/A** cfs.

12. If the impoundment will be drawn down, will potable water supply wells be adversely affected by such drawdown? ☐ Yes ☒ No

    If yes, provide plan for potable water supply as Attachment E12.

13. Submit as Attachment E13, a Dam Operations Maintenance Manual and Flood Emergency Operations Plan. See instructions (DEP-IWRD-INST-100) for this manual and plan.

14. Summary of Documents submitted with Attachment E: Check each document being submitted under Attachment E as verification that all applicable documents have been submitted.

    ☐ Attachment E7g: Supporting documentation for historic data

    ☐ Attachment E12: Plan for potable water supply, if applicable.

    ☒ Attachment E13: Dam Operations Maintenance Manual and Flood Emergency Operations Plan.

    ☐ Other, please specify:

ATTACHMENT E13
OPERATIONS AND MAINTENANCE MANUAL AND FLOOD EMERGENCY OPERATIONS PLAN

Relocation of the Paper Mill Pond Dam
Vernon, CT

The existing Paper Mill Pond Dam has a recorded maximum structural height of approximately 16.7 feet and a maximum storage capacity of approximately 90 acre-feet. According to the Connecticut DEEP, the dam is currently classified as being a **SMALL** sized structure with a **HIGH** (Class C) hazard potential.

The proposed dam is relocated upstream of the existing dam where the streambed invert is 7.5 feet higher. The proposed dam has a spillway height of 3.7 feet and a crest elevation identical to the existing dam. With a height of less than 4 feet, the dam should be classified as Low Hazard (Class A), in GZA's opinion.

DEEP's *Guidelines for Inspection and Maintenance of Dams* (September 2001) states that "DEP typically requires owners of Class B and C hazard classification dams to prepare individual Operation & Maintenance Manuals for their dams, while owners of Class A and BB dams are not routinely required to do so." The guidelines also state that "the DEP requires that owners of Class B and C potential hazard dams prepare and implement an Emergency Operations Plan (EOP)". It is not anticipated that an Operations and Maintenance Manual nor Emergency Operations Plan will be developed for the proposed relocated dam due to its small height and storage and reclassification as a Class C dam.

Part 1: Operations and Maintenance

There are no formal operational procedures for Paper Mill Pond Dam. The dam is operated and maintained by the Town of Vernon. The Town of Vernon occasionally opens and closes the low-level outlet gate, as well as conducts routine maintenance of the raceway and Paper Mill Pond.

After relocation of the dam, a follow-up visual dam inspection will be conducted.

Additionally, a formal Operations and Maintenance (O&M) Plan for the dam will be completed after the relocation is complete, if so required by CTDEEP. The O&M will be forwarded to the CT DEEP as part of the Dam Completion Report.

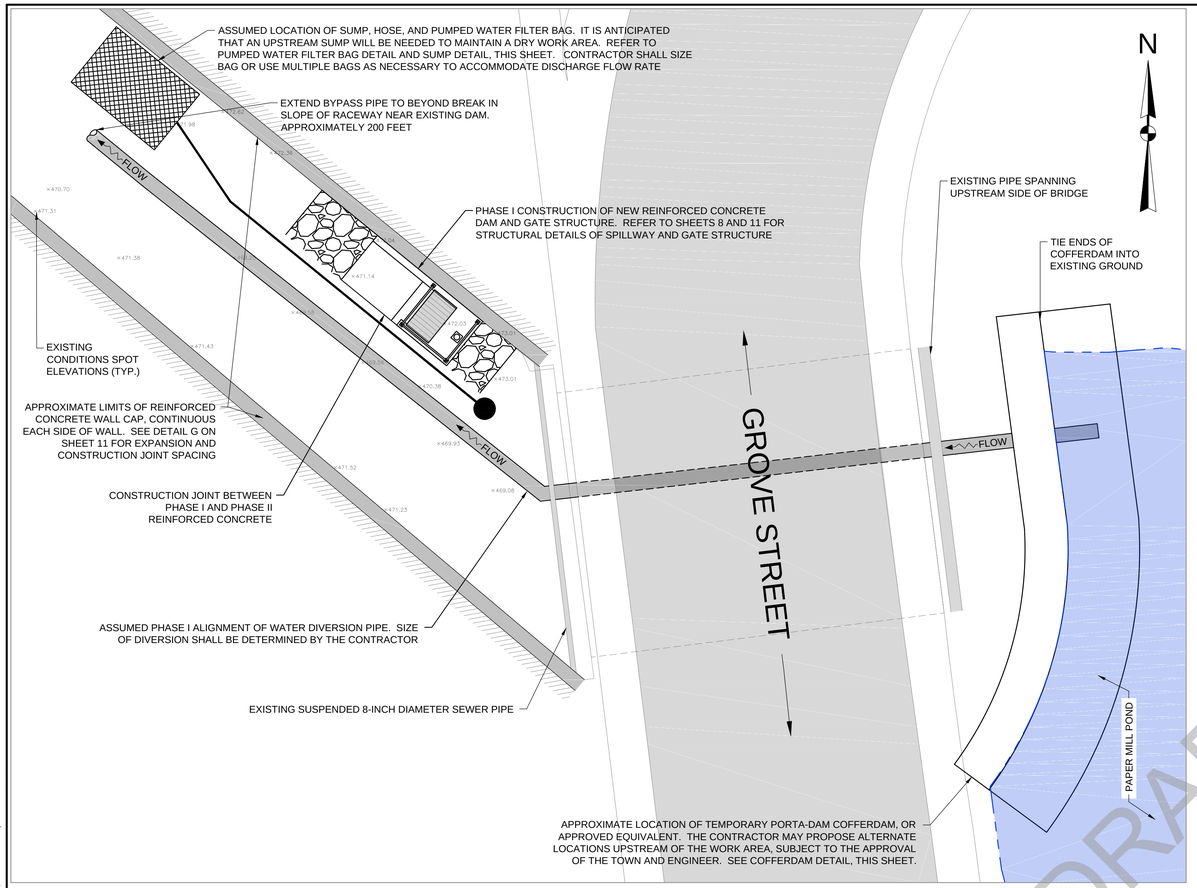
Part 2: Emergency Operations Plan

There is no formal Emergency Operations Plan for Paper Mill Pond Dam. However, the dam owner will inspect the dam during and immediately following a significant rainfall or flood event (i.e. "flood watch" or "flood warning" alerts issued by the National Weather Service (NWS) near the dam location). The State Office of Emergency Management and/or DEP Flood Emergency Operations Center will be notified in the event of an impending dam failure.

DAM CONSTRUCTION PERMIT APPLICATION

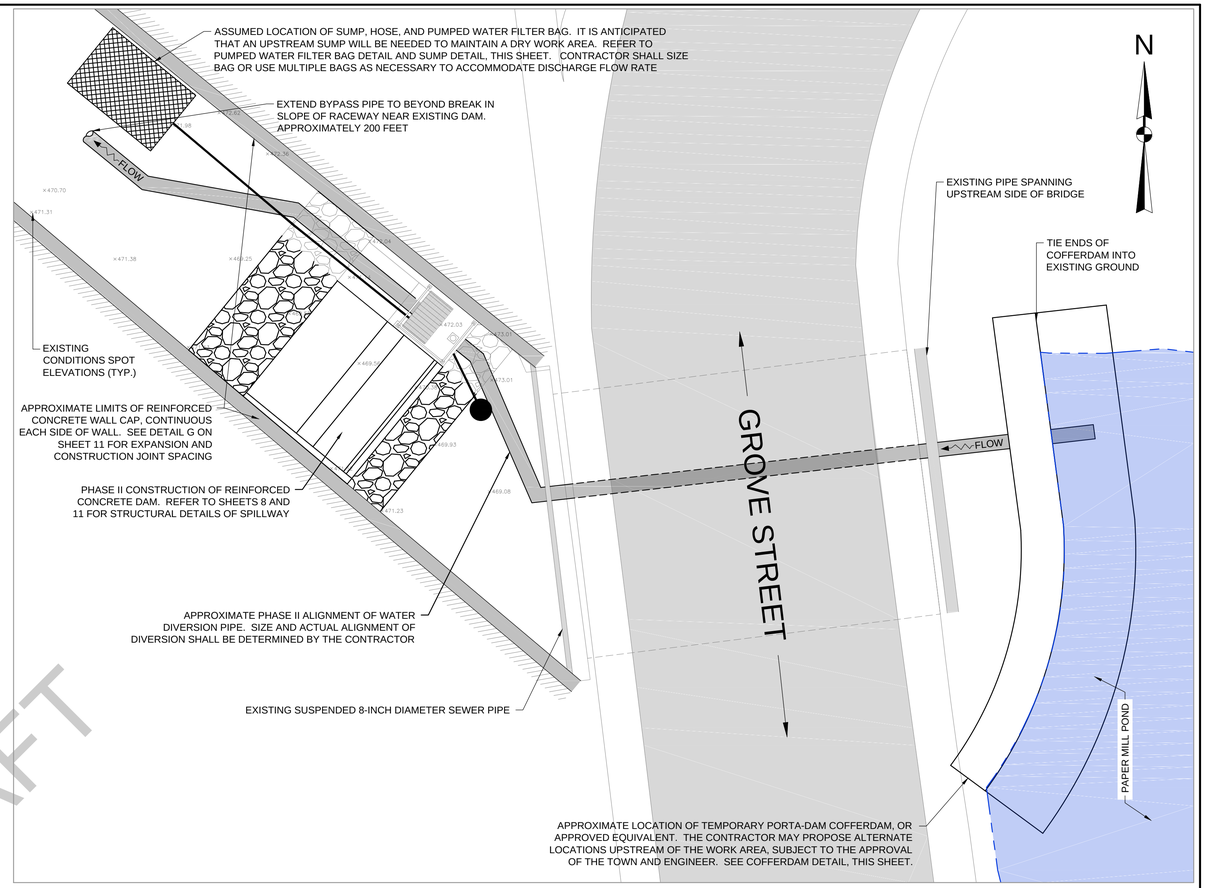
ATTACHMENT G

PLAN SHEETS AND DRAWINGS



PHASE I - SCHEMATIC WATER CONTROL AND CONSTRUCTION PHASING PLAN

NOT TO SCALE



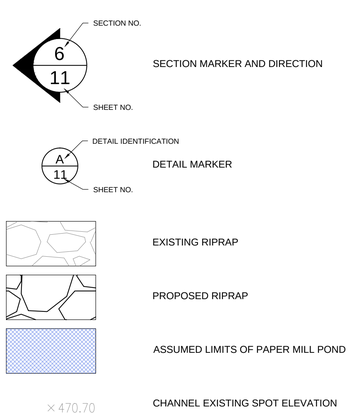
PHASE II - SCHEMATIC WATER CONTROL AND CONSTRUCTION PHASING PLAN

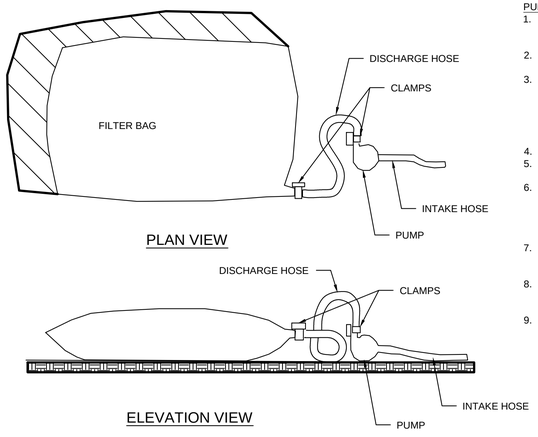
NOT TO SCALE

GENERAL CONSTRUCTION PHASING NOTES:

1. IT IS ANTICIPATED THAT THE DAM CONSTRUCTION WILL FOLLOW BUILDING DEMOLITION ACTIVITIES AT THE SITE.
2. THE DAM LOCATION IS WITHIN AN APPROXIMATELY 15 FOOT HIGH RACEWAY CHANNEL. EQUIPMENT ACCESS WILL LIKELY BE LIMITED.
3. THE CONTRACTOR SHALL ENSURE EQUIPMENT, MATERIALS, OR OTHER LOADS DO NOT DAMAGE THE EXISTING WALLS OR CAUSE THEM TO BECOME UNSTABLE.

LEGEND



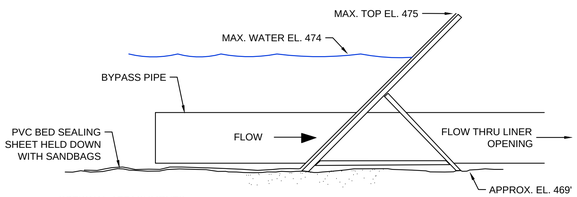


PUMPED WATER FILTER BAG DETAIL

NOT TO SCALE

PUMPED WATER FILTER BAG NOTES:

1. CONTRACTOR SHALL LOCATE FILTER BAG TO COMPLY WITH REQUIREMENTS BELOW. LOCATION IS SUBJECT TO APPROVAL BY THE ENGINEER.
2. FILTER BAGS SHALL BE USED TO FILTER WATER PUMPED FROM DISTURBED AREAS PRIOR TO DISCHARGING.
3. FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. CONTRACTOR SHALL PROVIDE A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY (FOR DISPOSAL PURPOSES).
4. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL.
5. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
6. BAGS SHALL BE LOCATED IN THE RACEWAY CHANNEL DOWNSTREAM OF THE WORK AREA. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PLACE STONE TO PROVIDE A STABLE LOCATION FOR THE FILTER BAG.
7. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
8. THE PUMPING RATE SHALL BE NO GREATER THAN 100 GPM OR ⅓ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
9. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.



OPTIONAL ATTACHMENTS:
- BACK BRACE POLE
- HORIZONTAL, ADDITIONAL BRACING
- SINGLE FRAME ATTACHMENTS FOR IRREGULAR CONTOURS

PHASE 1: OUTLET BY-PASS PIPES SUCH THAT BY-PASS FLOW IS ROUTED THROUGH LEFT SIDE OF CHANNEL

PHASE 2: OUTLET BY-PASS PIPES SUCH THAT BY-PASS FLOW IS ROUTED THROUGH NEWLY CONSTRUCTED LOW-LEVEL OUTLET GATE

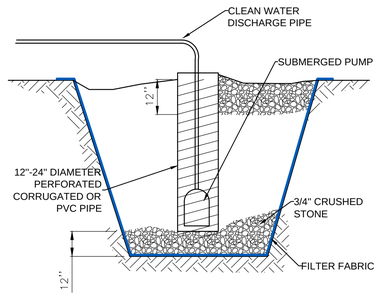
NOTES:

1. OTHER COFFERDAM SYSTEMS (i.e. WATER FILLED BLADDER, SAND FILLED SUPER SACKS, OR SIMILAR SYSTEMS) MAY BE USED PROVIDED THEY HAVE EQUAL OR LESSER TEMPORARY IMPACTS TO WETLANDS RESOURCES AND ARE APPROVED FOR USE BY THE ENGINEER.

2. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT TO DESIGN AND STAMP THE TEMPORARY COFFERDAM PROPOSED FOR USE IN THE WORK AT NO ADDITIONAL COST TO THE OWNER.

SCHEMATIC COFFERDAM DETAIL

NOT TO SCALE



DEWATERING SUMP DETAIL

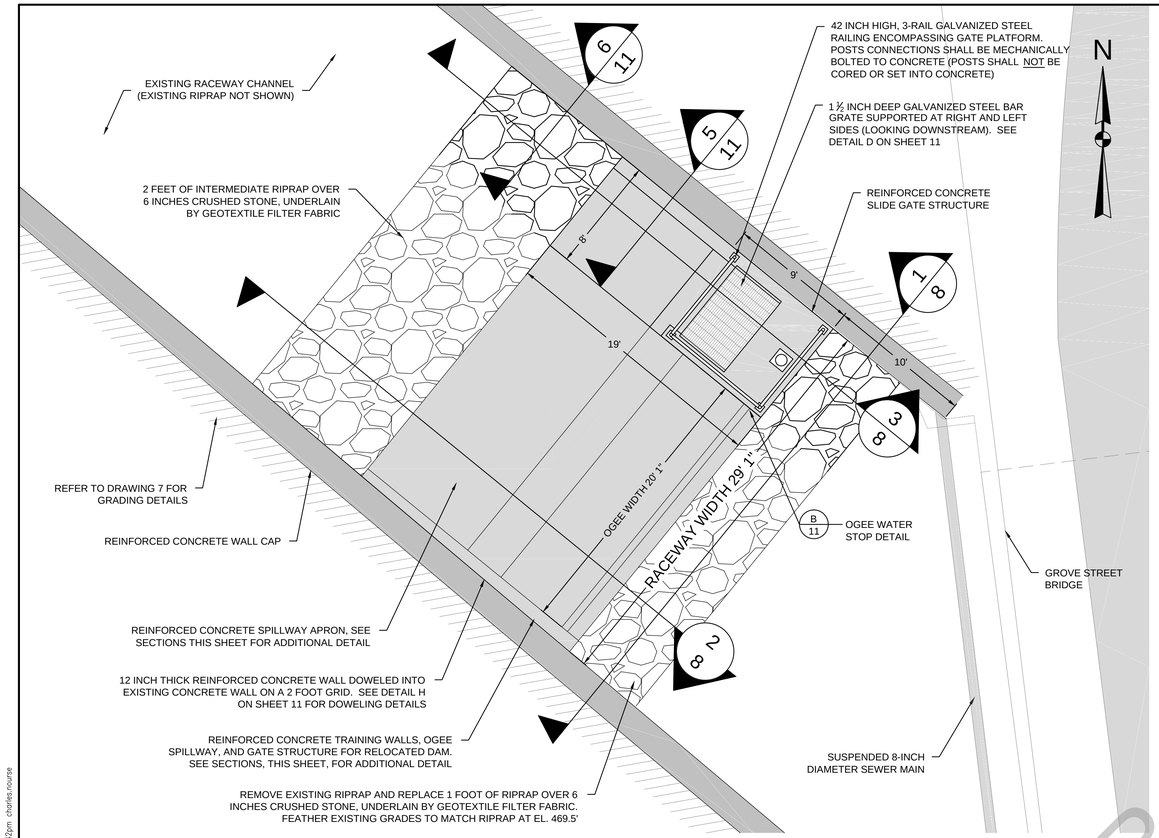
NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

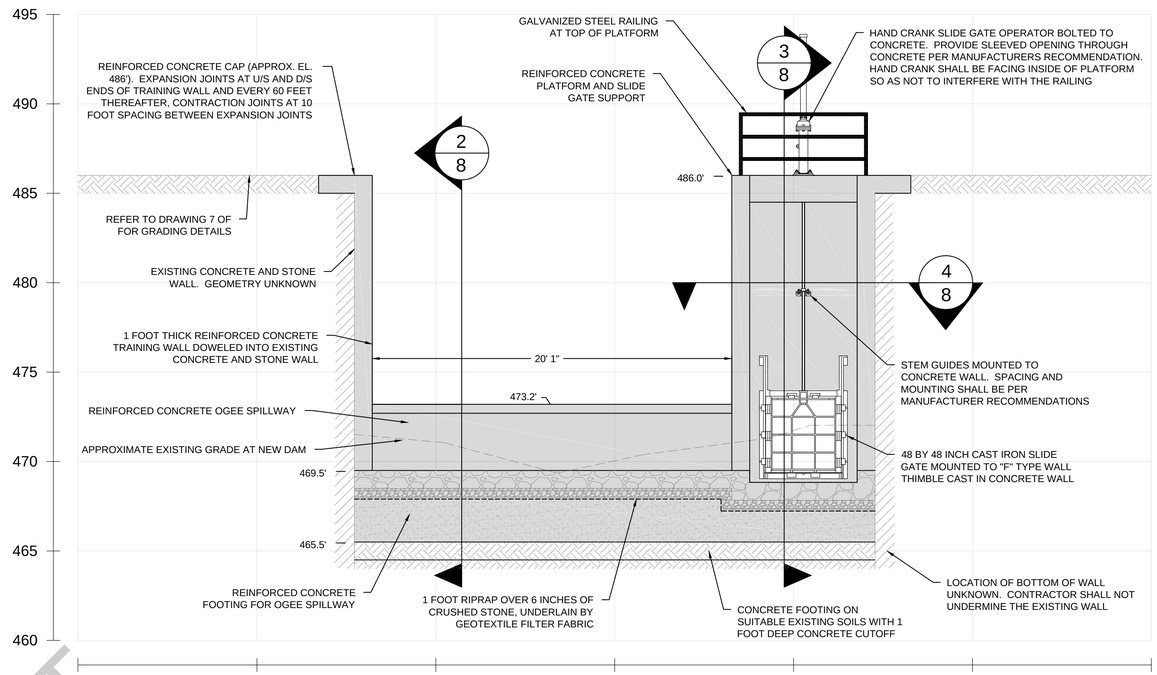
CONSTRUCTION PHASING AND WATER CONTROL PLAN DAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com			PREPARED FOR: THE TOWN OF VERNON, CONNECTICUT		
PROJ MGR:	CBN	REVIEWED BY:	PHB	CHECKED BY: CWC	FIGURE
DESIGNED BY:	CBN	DRAWN BY:	CBN	SCALE: AS NOTED	
DATE: 2-12-2016		PROJECT NO. 05.0045441.05		REVISION NO.	5



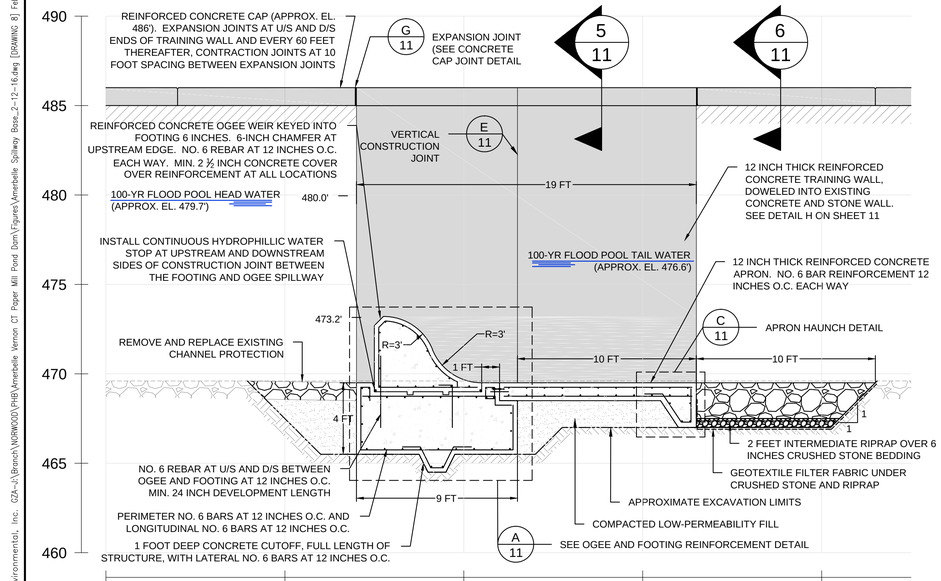
FINAL CONDITIONS PLAN VIEW OF NEW DAM STRUCTURE

SCALE: 1" = 5'



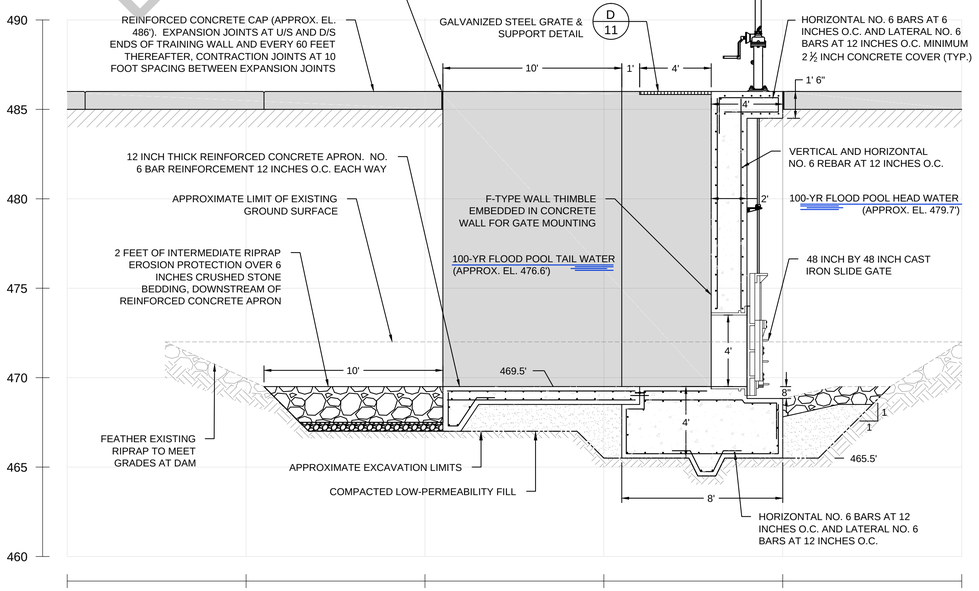
1/8 ELEVATION VIEW

SCALE: 1" = 4'



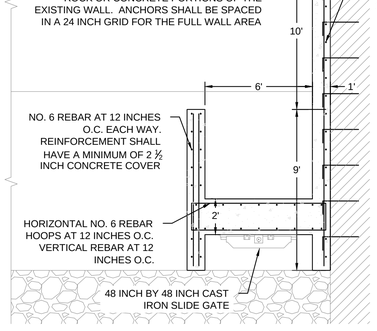
2/8 OGEE SPILLWAY SECTION VIEW

SCALE: 1" = 4'



3/8 LOW-LEVEL OUTLET SECTION VIEW

SCALE: 1" = 4'



4/8 LOW LEVEL OUTLET STRUCTURE SECTION VIEW

SCALE: 1" = 4'

NO.	ISSUE/DESCRIPTION	BY	DATE

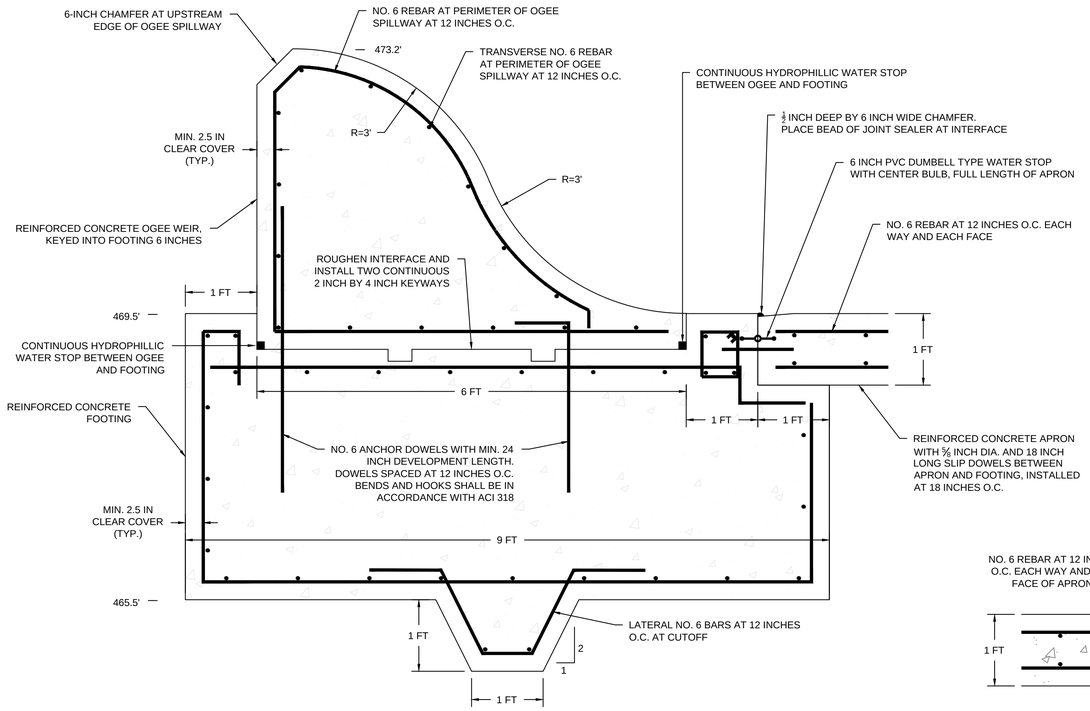
TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

FINAL CONDITIONS AND SECTIONS DAM

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

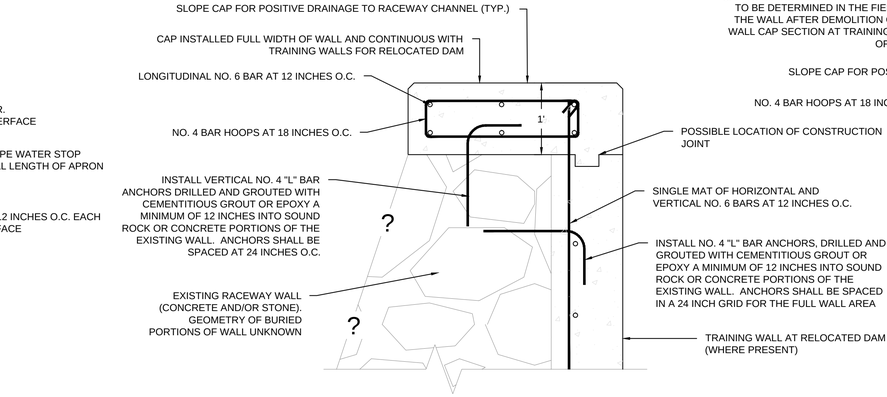
PREPARED FOR:
THE TOWN OF VERNON, CONNECTICUT

PROJ MGR: CBN	REVIEWED BY: PHB	CHECKED BY: CWC	FIGURE
DESIGNED BY: CBN	DRAWN BY: CBN	SCALE: AS NOTED	8
DATE: 2-12-2016	PROJECT NO. 05.0045441.05	REVISION NO.	



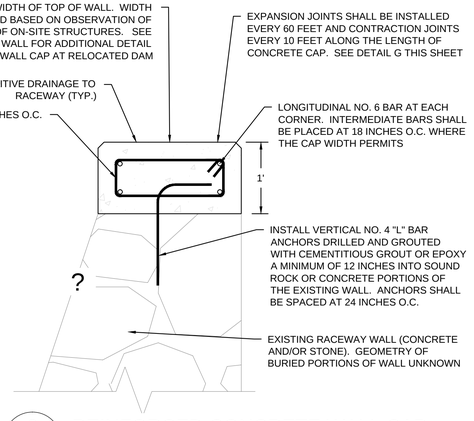
A 8 OGEE AND FOOTING REINFORCEMENT DETAIL

0 6" 1' 2'
SCALE: 1" = 1'



5 8 REINFORCED CONCRETE WALL CAP AT RELOCATED DAM TRAINING WALLS

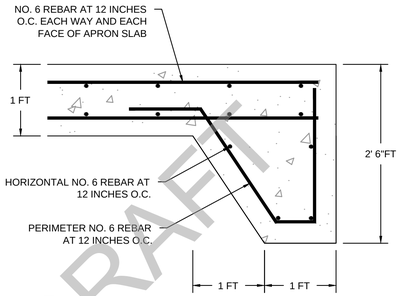
0 6" 1' 2'
SCALE: 1" = 1'



6 8 REINFORCED CONCRETE WALL CAP

0 6" 1' 2'
SCALE: 1" = 1'

NOTES:
1. REINFORCED CONCRETE WALL CAP SHALL BE INSTALLED FOR FULL LENGTH OF EXPOSED RACEWAY WALL AFTER DEMOLITION WORK. THE CAP SHALL ENCOMPASS THE FULL WIDTH OF THE TOP OF RACEWAY WALL. THIS WIDTH SHALL BE DETERMINED IN THE FIELD AFTER DEMOLITION ACTIVITIES EXPOSE THE TOP OF WALL.



C 8 APRON HAUNCH DETAIL

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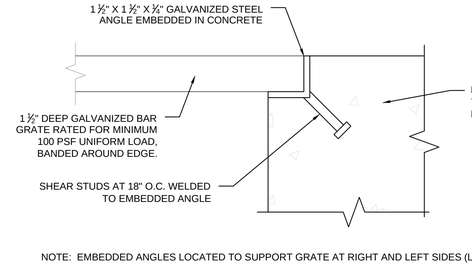
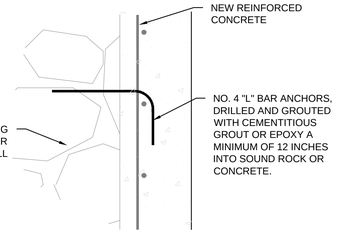


NOTE: EMBEDDED ANGLES LOCATED TO SUPPORT GRATE AT RIGHT AND LEFT SIDES (LOOKING DOWNSTREAM)

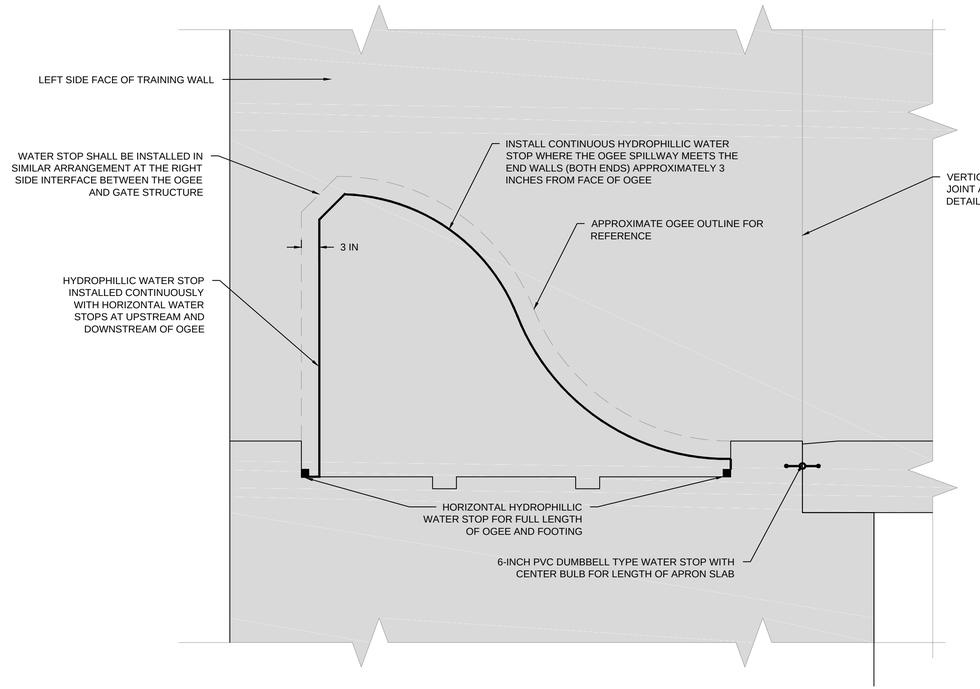
D 8 GALVANIZED STEEL GRATE AND SUPPORT DETAIL

NOT TO SCALE



H 8 ANCHOR DOWEL DETAIL

NOT TO SCALE



B 8 OGEE WATER STOP DETAIL

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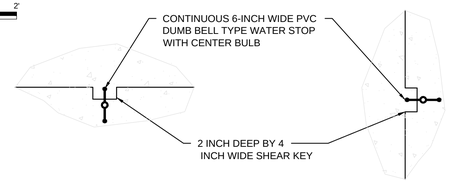
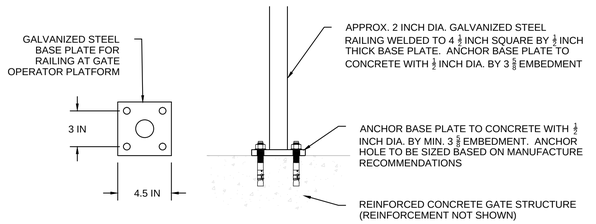
SCALE: 1" = 1'



HORIZONTAL C.J. VERTICAL C.J.

E 8 TYPICAL CONSTRUCTION JOINT DETAIL

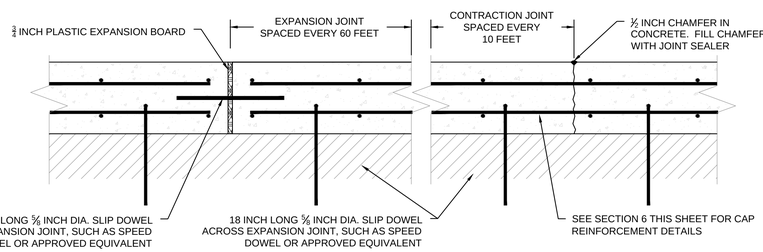
NOT TO SCALE



PLAN SECTION

F 8 RAILING CONNECTION DETAIL

0 3" 6" 12"
SCALE: 1" = 6"



EXPANSION JOINT CONTRACTION JOINT

NOTE: EXPANSION JOINTS SHALL BE INSTALLED WHERE THE CAP MEETS THE UPSTREAM AND DOWNSTREAM END OF THE RELOCATED DAM TRAINING WALLS.

G 8 CONCRETE CAP JOINT DETAIL

NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

MISCELLANEOUS DETAILS
DAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: THE TOWN OF VERNON, CONNECTICUT	
PROJ MGR: CBN	REVIEWED BY: PHB	CHECKED BY: CWC	FIGURE 11
DESIGNED BY: CBN	DRAWN BY: CBN	SCALE: AS NOTED	
DATE: 2-12-2016	PROJECT NO. 05.0045441.05	REVISION NO.	

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT H

ENGINEERING DOCUMENTATION

ATTACHMENT H
ENGINEERING DOCUMENTATION/REPORT

Relocation of the Paper Mill Pond Dam
Vernon, CT

1.0 INTRODUCTION

This attachment has been provided in compliance with CTDEP's Instructions for Completing Permit Applications for Programs Administered by the Inland Water Resources Division. Specifically, The Town of Vernon (Applicant) is submitting the application for 401 Water Quality Certification and for Dam Construction Permit. This section of the application is supplemented by Attachment H (Part 1): Engineering Report Checklist.

2.0 FLOODPLAINS ASSESSMENT

See attached GZA hydraulic letter report, dated February 4, 2016 (revised).

3.0 OTHER DESIGN CRITERIA

As specified in the "Instructions for Completing a Permit Application for Programs Administered by the Inland Water Resources Division," the following provides additional design criteria for the hydrologic and hydraulic evaluation of the raceway and proposed weir/dam:

Primary and Emergency Spillway and Outlet Structure Erosion Protection

The relocation of the Paper Mill Pond Dam will not require a drawdown of the Paper Mill Pond below its normal operating range, observed when the slide gate at the existing dam is routinely opened. However, a temporary cofferdam will be placed immediately upstream of the work area to control normal stream flow. The contractor will be required to use a temporary diversion pipeline to extend from the cofferdam to near the end of the raceway. In this way, the construction of the new dam will occur in-the-dry. Disturbed areas will be quickly stabilized and certain measures (i.e. straw bales, silt fencing) will be deployed to minimize the migration of sediment for the immediate work areas. Riprap will be placed downstream of the proposed spillway for permanent erosion protection. Riprap will also be installed along the toe of the raceways walls from the new dam location past the old dam location for scour protection. Refer to Attachment G which contains the design drawings.

Dam Breach Analysis

According to the Connecticut DEEP, the dam is currently classified as being a **SMALL** sized structure with a **HIGH** (Class C) hazard potential. The proposed dam is about 4 feet high with the same spillway crest elevation. It is expected that the dam will be reclassified as Low Hazard (Class C). Therefore, a Dam Breach Analysis was not considered necessary as part of this study, in GZA's opinion.

Construction Specifications

Pertinent constructions sequences and methods are provided on the design drawings included in Attachment G. Other pertinent sections of the specifications will be submitted to the Division of Dam Safety under separate cover. The proposed relocated Paper Mill Pond Dam will be constructed on native soils beneath the channel sediment. The excavation will extend about 4 feet below channel grade onto firm soil at which time the reinforced concrete foundation for the weir will be constructed.

Construction Observation & Testing

A Connecticut Licensed Professional Engineer shall oversee the inspection of critical construction activities including the following primary items which apply to the Paper Mill Pond Dam relocation:

- Cofferdam installation;
- Removal of the existing dam;
- Construction of the proposed dam.

4.0 WETLAND RESOURCES

There are no Endangered or Threatened Species listed in West Hartford, Connecticut according to the "State and Federal Listed Species and Natural Communities" found through the DEP website: www.ct.gov/dep/endangeredspecies.

There are no State and Federal Listed Species and Significant Natural Communities near the Paper Mill Pond Dam according to the current edition of the Natural Diversity Data Base Areas (NDDB) map issued by Connecticut DEP. A copy of the NDDB map is included in Attachment L (Mitigation Report).

The work is to be executed within a man-made raceway mill channel that was originally constructed in the 1860's. No wetland vegetation are located within this channel.

5.0 HISTORICAL SIGNIFICANCE OF DAM

The subject Site is located at 104 East Main Street in an industrial zone of Vernon, Connecticut (Tolland County). The Site is the former Amerbelle Corporation textile mill facility, which operated at the property from the late 1880s until approximately 2012. The property is owned by the Town of Vernon and is currently vacant. The facility complex is composed of approximately 13 buildings situated on two parcels, north and south of Brooklyn Street. The parcel north of Brooklyn Street is approximately 1.5 acres in size and contains Buildings 1 through 9, 11 and 13 and the Boiler Room building. The parcel located south of Brooklyn Street is approximately 2.7 acres and contains Buildings 12 and 14.

During the time of its operation, the Amerbelle Corporation produced specialty textiles for various applications. The Building 14 within the southern parcel was formerly used for dyeing, mixing and finishing operations and Building 12 was reportedly used for maintenance and repair of equipment and parts. In addition to dyeing operations, buildings within the northern parcel were also formerly used for coating operations, testing and storage.

The Paper Mill Pond Dam controlled the hydraulic head of the upper portion of the raceway.

6.0 WATER HANDLING & SEDIMENT AND EROSION CONTROL

Please refer to Attachment C and G for more details relating to Water Handling and Sediment and Erosion Control. Construction sediment and erosion controls will be installed prior to commencing any work. The Contractor will be responsible for maintaining and installing additional erosion and sediment controls to the satisfaction of the Town of Vernon and their designated representative. Construction of the proposed dam will be done "in the dry" using a temporary cofferdam and diversion pipeline. Once the cofferdam is in place the work area will be dewatered by a combination of gravity and pumping (as needed). Pumped water from the dewatering process will be treated by filter bags supplied and located by the Contractor.

The type of any sedimentation control (turbidity curtain or silt fencing) will be determined by the Contractor in the field based upon the reservoir levels at the time of work.

Stabilized construction entrances will be installed near the main entrance to the construction site south of Building 14. The entrances will be 50 feet in length and consist of 6 inches of 1.5-inch crushed stone.

J:\Branch\NORWOOD\PHB\Amerbelle Vernon CT Paper Mill Pond Dam\Permitting\CTDEEP\Part V - Attachments\Attachment H.docx

Attachment H: Engineering Documentation

Part 1: Engineering Report Checklist

The following is a checklist of requirements that need to be completed, included and submitted as part of the Engineering Report. Please complete this checklist by identifying where each requirement listed is addressed in the Engineering Report (report title and page numbers). If an item is not applicable, place "NA" in the box. Attach the completed checklist as the cover sheet to engineering reports, as applicable, which fully describe the design of the proposed facilities or other actions and the hydraulic and hydrologic effects thereof. The application instructions (DEP-IWRD-INST-100) should be consulted for a complete description of each item listed. This checklist is required to be signed and sealed by a professional engineer licensed in the State of Connecticut.

Stormwater Management

Location of Item	Item Description
NA	Description of the design storm frequency intensity, volume and duration
NA	Watershed maps, existing and proposed
NA	Computations for Tc
NA	Imperviousness calculations
NA	NRCS runoff curve numbers, volumetric runoff coefficients
NA	Computations used to determine peak runoff rates, and velocities for each watershed area (24-hour storm): • Stream Channel Protection: 2-year frequency (“over-control” of 2-year storm) • Conveyance Protection: 10-year frequency • Peak Runoff Attenuation: 2-year, 10-year, and 100-year frequency • Emergency Outlet Sizing: safely pass the 100-year frequency or larger storm
NA	Hydrograph routing calculations
NA	Description, schematics, and calculations for drainage and stormwater management systems, bridges and culverts
NA	Infiltration rates
NA	Documentation of sources
NA	Computer disk containing input and output data and the associated program for all computer models used in the analyses
NA	Hard copy of input and output data including input/output tables
NA	Detention basin analysis including timing and duration of expected outflow, stream stability analysis and hydrograph summation

Flood Plain Assessment

Location of Item	Item Description
H&H - Page 1-2	Description or simulation of existing and proposed conditions upstream and downstream of the proposed activity
NA	(For SCEL applications only) A determination of the effect of the proposed activity on flooding and flood hazards together with an equivalent encroachment on the opposite bank for the flood event establishing the encroachment lines
NA	For any bridge or culvert placement or replacement with a drainage area of 100 acres or more, plan sheets showing the existing and proposed inundation area for the 2, 10, 25, 50, and 100 year discharges, carried to convergence
NA	A description and analysis of the floodplain modifications required to restore any flood conveyance and flood storage capacity
H&H - Table 2	Demonstration that backwater from the proposed activity will not impact an existing dam, dike, or similar structure
H&H - Att 4-5	Backup data and complete hydraulic analysis for proposed modifications to the floodplain including location plan and plot for sections, profile sheet, summary sheet

Dams, Dikes, Diversion Channels, Similar Structures

Location of Item	Item Description
Page 1	Primary and emergency spillway and outlet structure erosion protection
Page 1	Dam breach analysis
NA	Geotechnical evaluation
Attachment G	Construction Specifications for foundation preparation, embankment material, outlet structure, and construction inspection

Soil Erosion and Sediment Control Plan

Location of Item	Item Description
Attachment G	Narrative
Attachment G	Drawings
Attachment G	Details
Attachment G+H	Calculations for Engineered Measures

Professional Certification

For any Engineering Report submitted as part of the IWRD permit application, the following certification must be signed and sealed by a professional engineer licensed to practice in Connecticut and submitted with the Engineering Report Checklist and Report.

"I certify that in my professional judgement, each requirement listed in the Engineering Report Checklist has been addressed in the Engineering Report submitted as part of the IWRD permit application as Attachment H, Part 1 and that the information is true, accurate and complete to the best of my knowledge and belief.

This certification is based on my review of the Engineering Report.

I understand that a false statement made in the submitted information may, pursuant to Section 22a-6 of the General Statutes, be punishable as a criminal offense under Section 53a-157b of the General Statutes, and may also be punishable under Section 22a-438 of the General Statutes."

Signature of Applicant	Date
David Smith, P.E., Town of Vernon Name of Applicant (print or type)	**Town Engineer** Title (if applicable)
Signature of Professional Engineer	Date
Peter H. Baril, P.E. Name of Professional Engineer (print or type)	**23654 (CT)** P.E. Number (if applicable)

Affix P.E. Stamp Here
(if applicable)

Attachment H: Engineering Documentation

Part 2: Hydrologic and Hydraulic Consistency Worksheet

Inland Water Resources Division Permit Activities

This worksheet has four sections; only complete the section(s) applicable to the proposed project. Where a question requires a "Yes" or "No" answer, select the appropriate response and explain your response, if required, in the space provided.

Section I: **Floodplain Management** *(if the proposed project involves a structure, obstruction, encroachment or work in a watercourse, floodplain, or coastal high hazard area)*

Section II: **Stormwater Management** *(if the proposed project involves stormwater drainage or stormwater runoff*)

Sections III: **State Grants and Loans** and **Section IV: Disposal of State Land** *(only if the applicant is a state agency seeking flood management certification approval for state grants and loans or disposal of state land)*

Contents:

Definitions of terms used in these worksheets are found in Section 25-68b of the Connecticut General Statutes and Section 25-68h-1 of the Regulations of Connecticut State Agencies and in the National Flood Insurance Program Regulations (44 CFR, Chapter 1, Subchapter B, Part 59.1).

Section I: Floodplain Management

Section I: Floodplain Management

Name of Applicant: **Town of Vernon**

Name of Proposed Project: **Paper Mill Pond Dam Relocation**

1. General Criteria

a. *Critical Activity* - Does the proposed project involve the treatment, storage and disposal of hazardous waste or the siting of hospitals, housing for the elderly, schools or residences, in the 0.2 per cent [500 year] floodplain? ☐ Yes ☒ No

If yes, the base flood for the critical activity shall have a recurrence interval equal to the 500 year flood event; if no, the base flood for the activity shall have a recurrence interval equal to the 100 year flood event.

b. *Nonintensive Floodplain Uses* - Will the proposed project promote development in floodplains or will utilities servicing the project be located so as to enable floodplain development?

☐ Yes ☒ No

Explain:

c. *National Flood Insurance Program* (NFIP) - Will the proposed project be located within an area of special flood hazard designated by the Federal Emergency Management Agency (FEMA)?

☐ Yes ☒ No If yes, list the FEMA flood zone(s):

Dam will be located within the raceway of the Upper Hockanum River.

Does the proposed project meet the NFIP minimum standards established in 44 CFR, Chapter 1, Subchapter B, Part 60.3, floodplain management criteria for flood-prone areas?

☐ Yes ☐ No

d. *Municipal Regulations* - Has the municipality in which the proposed project is to be located adopted floodplain regulations containing requirements that are more restrictive than the NFIP floodplain management criteria for flood-prone areas? ☐ Yes ☒ No

If yes, describe the more restrictive requirements:

Does the proposed project comply with the more restrictive standards of the municipality?

☐ Yes ☐ No

Section I: Floodplain Management (continued)

2. Flooding and Flood Hazards

a. *Flooding* - Will the proposed project pose any hazard to human life, health or property in the event of a base flood? ☐ Yes ☒ No

If yes, explain:

b. *Flood Velocities* - Will the proposed project cause an increase in flow velocity or depth during the base flood discharge? ☒ Yes ☐ No

If yes, the increase in velocity is: **20** fps
and/or the increase in depth is: **0** ft.

Will such increase in velocity or depth cause channel erosion or pose any hazard to human life, health or property? ☐ Yes ☒ No

Explain:

The increase in flow velocity occurs in a man-made sluiceway. Part of the sluiceway used to be upstream of the dam, and therefore had stagnant water. The dam is being moved 250 feet upstream. Part of the sluiceway which used to have stagnant water will now have free flowing water.

c. *Flood Storage* - Will the proposed project affect the flood storage capacity or flood control value of the floodplain? ☐ Yes ☒ No

If yes, describe the effects:

d. *Degrading or Aggrading Stream Beds* - Is the streambed currently degrading or aggrading?

☐ Degrading ☐ Aggrading ☒ Neither

Has the project design addressed degrading or aggrading streambed conditions?

☒ Yes ☐ No

e. *Ice Jams* - Is the watercourse prone to ice jams or floods due to ice? ☐ Yes ☒ No

Has the project design considered ice jams or floods due to ice? ☐ Yes ☒ No

Section I: Floodplain Management (continued)

f. *Storage of Materials & Equipment* - Will the construction or use of the proposed project involve the storage of materials below the 500 year flood elevation that are buoyant, hazardous, flammable, explosive, soluble, expansive or radioactive, or the storage of any other materials which could be injurious to human, animal or plant life in the event of a flood?

☐ Yes ☒ No

If yes, describe the materials and how such materials will be protected from flood damage, secured or removed from the floodplain to prevent pollution and hazards to life and property.

Storage of materials that could be injurious to human health or the environment in the event of flooding is prohibited below the elevation of the 500 year flood. Other material or equipment may be stored below the 500 year flood elevation provided that such material or equipment is not subject to major damage by floods, and provided that such material or equipment is firmly anchored, restrained or enclosed to prevent it from floating away or that such material or equipment can be removed prior to flooding.

g. *Floodwater Loads* - Will structures, facilities and stored materials be anchored or otherwise designed to prevent floatation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy? ☒ Yes ☐ No

3. Standards for Structures in Floodplains or Coastal High Hazard Areas

Does the proposed project involve a new or substantially improved structure or facility located within a floodplain or coastal high hazard area? ☒ Yes ☐ No

If yes, complete this subsection; if no, skip to subsection 4 ***(Topography Changes within Floodplain)***.

a. *Structures in Coastal High Hazard Areas* - Will the structure or facility be located within an NFIP coastal high hazard area? ☐ Yes ☒ No

If no, skip to paragraph 3(b); if yes:

1. Will the structure or facility be located landward of the reach of mean high tide?

   ☐ Yes ☐ No

2. Will a new structure or facility be located on an undeveloped coastal barrier beach designated by FEMA? ☐ Yes ☐ No

3. If the structure or facility is/will be located within a coastal high hazard area, the structure or facility must be elevated on pilings or columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to at least one foot above the base flood level and the pile or column foundation and structure attached thereto must be anchored to resist floatation, collapse and lateral movement due to the effects of wind, velocity waters, hurricane wave wash, and base flood water loads acting simultaneously on all building components.

   Does the proposed structure or facility meet these standards? ☐ Yes ☐ No

   The base flood elevation is: ft. (Datum:)

   The elevation of the lowest horizontal structural member is: ft. (Datum:)

Section I: Floodplain Management (continued)

4. Will the space below the lowest floor be either free of obstruction or constructed with non-supporting breakaway walls? ☐ Yes ☐ No

5. Will fill be used for structural support of any buildings within coastal high hazard areas?

   ☐ Yes ☐ No

b. *Structures in Floodplain Areas* - Are the structures residential or nonresidential?

☐ Residential ☒ Nonresidential If *nonresidential*, skip to paragraph 3(d) below.

c. *Residential Structures* - If the structure or facility is for human habitation will the lowest floor of such structure or facility, including its basement, be elevated one foot above the level of the 500 year flood?

☐ Yes ☐ No

The 500 year flood elevation is: ft. (Datum:)

The elevation of the lowest floor, including basement, is: ft. (Datum:)

d. Non-residential Structures - If the structure or facility is not intended for residential uses, will the lowest floor of such structure or facility, including its basement, be elevated to or above the 100 year flood height or be floodproofed to that height, or in the case of a critical activity, the 500 year flood height?

☐ Yes ☒ No

If yes, the structure will be: ☐ Elevated ☐ Floodproofed

The base flood elevation is: ft. (Datum:)

The elevation of the lowest floor, including basement, is: ft. (Datum:)

The structure is floodproofed to: ft. (Datum:)

Note: for insurance purposes nonresidential structures must be floodproofed to at least one foot above the base flood elevation. DEP strongly encourages that the height of floodproofing incorporate one foot of freeboard.

e. *Utilities* - Will service facilities such as electrical, heating, ventilation, plumbing, and air conditioning equipment be constructed at or above the elevation of the base flood or floodproofed with a passive system? ☐ Yes ☒ No

f. *Water Supply Systems* - Does the proposed project include a new or replacement water supply system?
☐ Yes ☒ No

If yes, is the water supply system designed to prevent floodwaters from entering and contaminating the system during the base flood? ☐ Yes ☐ No

g. *Sanitary Sewage Systems* - Does the proposed project include a new or replacement sanitary sewage or collection system? ☐ Yes ☒ No

If yes, is the sanitary sewage system designed to minimize or eliminate the infiltration of flood waters into the systems and discharges from the systems into flood waters during the base flood?

☐ Yes ☐ No

h. *Foundation Drains* - Are foundation drains of buildings designed to prevent backflow from the 100 year frequency flood into the building?

☐ Yes ☐ No ☒ No foundation drains

Section I: Floodplain Management (continued)

4. Activity within Floodplain

Does the proposed project involve activity in a floodplain including but not limited to filling, dumping, construction, excavating, or grading?

☒ Yes ☐ No If no, skip to subsection 5 ***(Alterations of Watercourses)***.

If yes, does the proposed project include encroachments, including fill, new construction, substantial improvements, or other development within a NFIP adopted regulatory floodway?

☒ Yes ☐ No If yes, skip to paragraph 4(b) below.

a. *No Regulatory Floodway* - The NFIP requires that until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point. (If no regulatory floodway has been adopted, project impacts may be evaluated by considering an equivalent conveyance loss on the opposite side of the river from the proposed project.)

Is the proposed project consistent with this requirement? ☒ Yes ☐ No

b. *Floodway Encroachments* - Will the proposed encroachment into the floodway result in any increase in flood levels during either the 100 year or 10 year discharges?

100 year: ☐ Yes; the increase is: (in 1/100ths of a foot) ☒ No

If yes, has the applicant received approval of such increase in accordance with 44 CFR, Chapter 1, Subchapter B, Part 65.12? ☐ Yes ☐ No

10 year: ☐ Yes; the increase is: (in 1/100ths of a foot) ☐ No

c. *Coastal Areas* - Flood hazard potential in coastal areas shall be evaluated considering surface profiles of the combined occurrence of tides, storm surges, and peak runoff. The starting water surface elevation for the base flood in watersheds with time of concentrations of over 6 hours shall be the 10 year frequency tidal surge level.

If the proposed project is in a coastal area, have the hydraulic analyses incorporated these criteria?

☐ Yes ☐ No ☒ Not in Coastal Area

5. Alterations of Watercourses

Does the proposed project include the construction or alteration to a natural perennial watercourse or man-made channel?

☒ Yes ☐ No If no, skip to subsection 6 ***(Culverts and Bridges)***; if yes, complete the following subsection:

a. *Topography Change* - Is the watercourse or channel located within a regulatory floodway or Zone A1-30 or AE as designated by the NFIP? ☐ Yes ☒ No

b. *Hydraulic Capacity* - Does the channel have a minimum flow capacity of a flood equal to at least the 25 year frequency flood? ☐ Yes ☒ No

The channel capacity is designed for the: **100 to 500** year flood.

Does the channel have an inner channel with a capacity of a 2 year frequency flood? ☐ Yes ☒ No

Section I: Floodplain Management (continued)

c. *Aquatic Habitat* - Channel alterations should be designed to create aquatic habitats suitable for fisheries, including suitable habitat for maintaining fish populations and to enable fish passage, and to maintain or improve water quality, aesthetics, and recreation.

Has the applicant had any pre-application meetings or correspondence with DEP Fisheries?

☐ Yes ☒ No

Check each of the following criteria that have been incorporated into the project design:

☐ 1. artificial channel linings have been avoided;

☐ 2. the channel will encourage ecological productivity and diversity;

☐ 3. the channel and its banks will be compatible with their surroundings;

☐ 4. the channel will vary in its width, depth, invert elevations, and side slopes to provide diverse aquatic habitat;

☐ 5. straightening existing channels and thereby decreasing their length has been avoided;

☐ 6. the channel will not create barriers to upstream and downstream fish passage;

☐ 7. the channel will contain pools and riffles and a low flow channel to concentrate seasonal low water flows;

☐ 8. the channel will contain flow deflectors, boulders and low check dams to enhance aquatic habitat;

☐ 9. stream bank vegetation will be preserved where feasible and disturbed stream bank areas will be replanted with suitable vegetation;

☐ 10. clean natural stream bed materials of a suitable size will be incorporated in the new channel; and

☐ 11. construction of the proposed project will be scheduled to minimize conflicts with spawning, stocking, and recreational fishing seasons.

Describe how the above aquatic habitat design criteria have been incorporated into the project design:

Not altering channel.

Section I: Floodplain Management (continued)

6. Culverts and Bridges

Does the proposed project involve the repair or new construction of a culvert or bridge?

☐ Yes ☒ No If no, go to subsection 7 ***(Temporary Hydraulic Facilities)***.

If yes, complete this subsection:

a. *Fish Passage* - Does the culvert design allow for the passage of fish? ☐ Yes ☐ No

If yes, describe the specific design provisions for fish passage:

b. *Depressed Structural Floors* - Is the rigid structural floor of the culvert or bridge depressed below the normal stream bed to allow a natural stream bed to form over the floor?

☐ Yes ☐ No ☐ No rigid structural floor

c. *Multiple Openings* - The use of a single large culvert or bridge opening is preferred over the use of multiple small openings. Has the design minimized the use of multiple small openings?

☐ Yes ☐ No

If no, explain:

d. *Sag Vertical Curves* - Does the design utilize solid parapet walls in the sag part of a vertical curve?

☐ Yes ☐ No ☒ Not located in a sag vertical curve

e. *Debris Blockage* - Is the culvert or bridge prone to blockage by debris? ☐ Yes ☒ No

If yes, has the project design incorporated measures to minimize the potential for debris blockage?

☐ Yes ☐ No

f. *Topography Change* - Is the culvert or bridge located within a regulatory floodway or Zone A1-30 or AE as designated by the NFIP? ☐ Yes ☐ No

Section I: Floodplain Management (continued)

g. *State Highways* - Does the watercourse pass under a state roadway?

☒ Yes ☐ No If no, skip to paragraph 6(g)(2).

If yes, culverts and bridges for state highways shall be designed in accordance with the Connecticut Department of Transportation (DOT) Drainage Manual and all applicants should refer to it for specific design criteria. In general, however, the Drainage Manual requires the following:

(Place a check mark for all applicable criteria utilized)

☐ *Minor Structures* - Minor structures have a drainage area of less than one square mile in which there is no established watercourse. They shall be designed to pass the 25 year frequency discharge.

☐ *Small Structures* - Small structures have a drainage area of less than one square mile in which there is an established watercourse. *They* shall be designed to pass the 50 year frequency discharge.

☐ *Intermediate Structures* - Intermediate structures have a drainage area greater than one square mile and less than 10 square miles. They *shall* be designed to pass the 100 year frequency discharge with reasonable underclearance.

☐ *Large Structures* - Large structures have a drainage area greater than 10 square miles and less than 1000 square miles. They shall be designed to pass the 100 year frequency discharge with an underclearance not less than two feet.

☐ *Monumental Structures* - Monumental structures *have* a drainage area greater than 1000 square miles. They shall be designed to meet the requirements of the Connecticut Department of Environmental Protection, U.S. Army Corps of Engineers, and the U.S. Coast Guard.

☐ *Tidal Structures* - Tidal structures are subject to tidal action and shall be classified as minor, small, intermediate, etc. depending on their drainage area. These structures shall be designed in accordance with the previously listed *classifications*. However if the highway is subject to frequent tidal flooding, the design storm may be made consistent with the frequency of flooding by tidal action. The proposed culvert or bridge is classified as:

- ☐ Tidal, minor
- ☐ Tidal, small
- ☐ Tidal, intermediate
- ☐ Tidal, large
- ☐ Tidal, monumental

1. Has the structure been designed in accordance with the criteria established in the DOT Drainage Manual? ☐ Yes ☒ No

   If no, describe the lower design standards and the reasons for not complying with the DOT Drainage Manual:

   CTDEEP Dam safety regulations apply to this project.

Section I: Floodplain Management (continued)

2. Will the proposed culvert or bridge increase upstream water surface elevations in the event of a base flood above that which would have been obtained in the natural channel if the highway embankment were not constructed? ☐ Yes ☐ No

   If yes, is the increase in elevation more than one foot? Describe:

   This is a dam construction, not a bridge or culvert project.

3. Will the proposed culvert or bridge be designed so that flooding during the design discharge does not endanger the roadway or cause damage to upstream developed property? (NOTE: The design discharge for culverts and bridges on state highways should be that which was determined by FEMA. If the applicant judges that the FEMA discharge is inappropriate, the project should be analyzed for both the applicant's computed flow and the FEMA discharge. The project, however, must still meet the standards of the NFIP.) ☐ Yes ☐ No

   Explain:

   see above

h. *Local Roads & Driveways* - Local roads (not state highways) and driveways may be designed for flood frequencies and underclearances less stringent than those specified in the DOT Drainage Manual when (check all that have been incorporated into the project design):

   ☐ 1. the road is at or close to the floodplain grade

   ☐ 2. water surface elevations are not increased by more than one foot nor cause damage to upstream properties

   ☐ 3. provisions are made to barricade the road when overtopped

   ☐ 4. the road or driveway is posted as being subject to flooding

   ☐ 5. the road or driveway has low traffic volume

   ☐ 6. alternate routes are available

   The culvert or bridge has been designed to pass the: year frequency discharge with an underclearance of: feet.

   Utilizing the DOT Drainage Manual classifications listed under paragraph 6(g) above, the culvert or bridge is classified as a: structure.

Section I: Floodplain Management (continued)

h. If the culvert or bridge is designed to standards lower than which is stipulated in the DOT Drainage Manual, list such standards and the reasons for the lower design standards:

i. *Downstream Peak Flows* - Will the proposed culvert or bridge increase downstream peak flows by decreasing existing headwater depths during flooding events? ☐ Yes ☐ No

If yes, describe the selected design criteria and the impacts to downstream properties:

7. Temporary Hydraulic Facilities

Temporary hydraulic facilities include all channels, culverts or bridges which are required for haul roads, channel relocations, culvert installations, bridge construction, temporary roads, or detours. They are to be designed with the same care which is used for the primary facility.

If the proposed activity involves a temporary hydraulic facility(s), has such facility been designed in accordance with Chapter 6, Appendix F, "Temporary Hydraulic Facilities," of the DOT Drainage Manual?

☒ Yes ☐ No ☐ No temporary hydraulic facilities

If yes, the design flood frequency is the: year flood.

Describe the temporary facilities:

Construction of dam requires Contractor to install temporary cofferdam and stream flow diversion pipeling so work is conducted in the dry.

Section II: Stormwater Management

Name of Applicant: **Town of Vernon**

Name of Proposed Project: **Paper Mill Pond Dam Relocation at former Amerbelle Mill**

1. *Stormwater Runoff*

The proposed project will (check all that apply):

- ☐ Increase the area of impervious surfaces
- ☐ Increase runoff coefficients
- ☐ Alter existing drainage patterns
- ☐ Alter time of concentrations
- ☐ Change the timing of runoff in relation to adjacent watersheds

Will the proposed project impact downstream areas by increasing peak flow rates, the timing of runoff, or the volume of runoff? ☐ Yes ☒ No

If yes, describe the downstream impacts for the 2, 10 and 100 year frequency discharges:

The pre and post development peak flow rates at the downstream design point are as follows:

Return Frequency (Year)	Peak Discharges (CFS)	
	Pre-Development	Post-Development
2		
10		
100		

The above peak discharges were computed utilizing the: hour duration storm. This duration storm was selected because:

New dam does not involve increases in impervious surfaces or increases in runoff.

Section II: Stormwater Management (continued)

Describe the location of the design point and why this location was chosen:

N/A

2. *Stormwater Detention Facilities*

Does the proposed project include the construction of any stormwater detention facilities?

☐ Yes ☐ No If no, skip to subsection 3 ***(Storm Drainage Systems)***.

If yes, has the DEP determined whether a dam construction permit is required? ☐ Yes ☐ No

The pre and post development peak flow rates at the downstream design point are as follows:

Return Frequency (Year)	Peak Discharges (CFS)		
	Pre-Development	Post-Development (without detention)	Post-Development (with detention)
2			
10			
100			

The above peak discharges were computed utilizing the: hour duration storm. This duration storm was selected because:

N/A

Describe the location of the design point and why this location was chosen:

Section II: Stormwater Management (continued)

If the proposed project increases peak flow rates for the 2, 10 or 100 year frequency discharges, describe the impacts to downstream areas:

New dam is configured so as not to adversely impact flood water surface elevations in raceway or in Paper Mill Pond.

Will the detention facility aggravate erosion along the downstream channel? ☐ Yes ☐ No

In certain situations, detention of stormwater aggravates downstream flooding. This occurs when the discharge from a subwatershed is delayed by a detention facility so that it adds to the peak discharge from another subwatershed. Adding the hydrographs of the two subwatersheds results in a higher peak discharge over that which would occur if detention were not present.

Is the location of the detention facility within the watershed suitable for detention? ☐ Yes ☐ No

Explain:

Project does not include construction of stormwater detention facilities.

3. *Storm Drainage Systems*

Does the proposed project include the construction of subsurface storm drainage systems?

☐ Yes ☒ No If no, you have completed Section II of the worksheets.

If yes, complete this subsection:

a. *DOT Standards* - Is the proposed storm drainage system designed in accordance with the Connecticut Department of Transportation's (DOT) Drainage Manual? ☐ Yes ☐ No

If no, describe the lower design standards and the reasons for not complying with the Drainage Manual:

b. *Design Storm* - Is the storm drainage system designed for a ten year frequency storm without closing the use of the facility? ☐ Yes ☐ No

c. *Future Development* - Has the design of the system considered future development of adjacent properties? ☐ Yes ☐ No

Section II: Stormwater Management (continued)

d. *Outlet Protection* - Have the outlets from the system been designed to minimize the potential for downstream erosion? ☐ Yes ☐ No

e. *Overland Flow* - Has the use of curbing been minimized to encourage overland dispersed flow through stable vegetated areas? ☐ Yes ☐ No

f. *Vegetated Filter Strips* - Has the design incorporated the use of vegetated filter strips or grass swales to improve the quality of water outletting from the storm drainage system? ☐ Yes ☐ No

g. *Stormwater Treatment* - Describe features of the stormwater collection system intended to improve the quality of stormwater runoff prior to its discharge to surface waters.

h. *E & S Control Plan* - Has the design and installation of the storm drainage system been coordinated with the soil erosion and sediment control plan prepared in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control? ☐ Yes ☐ No

Explain:

N/A

Section III: State Grants and Loans

Name of Applicant: **Town of Vernon**

Name of Proposed Project: **Redevelopment of the Amerbelle Mill Site**

1. This Flood Management Certification concerns a: ☒ grant ☐ loan

2. Total amount of grant or loan: $ **4,000,000**

3. The recipient of the grant or loan will be:

   Name: **Town of Vernon**

   Mailing Address: **55 West Main Street**

   City/Town: **Vernon** State: **CT** Zip Code: **06066**

   Phone: **860-870-3663** ext. Fax: **860-870-3664**

   Recipient Contact person:

   Name: **David Smith**

   Mailing Address: **55 West Main Street**

   City/Town: **Vernon** State: **CT** Zip Code: **06066**

   Phone: **860-870-3663** ext. Fax: **860-870-3664**

4. The recipient will use the grant or loan to (check all that apply):

   ☒ construct a structure, obstruction or encroachment or conduct other work within a floodplain or coastal high hazard area.

   ☐ construct a facility or develop a site affecting drainage and stormwater runoff.

   ☐ conduct a study or prepare a report concerning land use or land use planning affecting a floodplain, drainage or stormwater runoff.

5. If the grant or loan is for a study or report, describe the anticipated effects on floodplains, drainage or stormwater runoff if the recommendations are implemented:

   The grant is for brownfields development of the Amerbelle Mill Site.

6. Will the proposed project promote development in floodplains or will utilities servicing the project be located so as to enable floodplain development? ☐ Yes ☒ No

   Explain:

   If the grant or loan is for construction of a structure, obstruction or encroachment or other work within a floodplain, or if it is for construction of a facility or development of a site that will affect drainage and stormwater runoff, Sections I and/or II of this Worksheet must be completed and the engineering report (Attachment H) and plans (Attachment G) must be provided as part of this application.

Section IV: Disposal of State Land

Name of Applicant:

Name of Proposed Project:

1. The grantee will be:

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Phone: ext. Fax:

   Contact Person: Phone:

2. Describe the current state of development and use of the land to be disposed.

3. Why is the agency disposing of the land?

4. Describe the grantee's intended use of the land.

5. Will the disposal of the land promote development in floodplains? ☐ Yes ☐ No

   Explain:

6. Will the grantee's use of the land be consistent with the state's flood management statutes and regulations?

   ☐ Yes ☐ No Explain:

Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

249 Vanderbilt Avenue
Norwood, MA 02062
781.278.3700
www.gza.com

August 7, 2015 (REVISED February 4, 2016)
GZA File No. 05.0045441.01

Mr. David A. Smith, P.E., L.S.
Town Engineer – Town of Vernon
Engineering Department
55 West Main Street
Rockville, Connecticut 06066-3291

Re: Hydraulic Modelling Engineering Services – Revision 1
Paper Mill Pond Dam, Hockanum River
Vernon, CT

Dear Mr. Smith,

GZA GeoEnvironmental, Inc. (GZA) is pleased to provide the Town of Vernon with this letter report summarizing the methods, assumptions, and results regarding the water surface profile analyses prepared by GZA for the Hockanum River at the former Amerbelle Mill Property in Vernon, CT (site). The site was the location of Amerbelle Textiles, a textile mill in the Rockville section of Vernon, which closed in 2012. This work was performed in accordance with the proposal letter / contract, signed by the Town of Vernon (Client) on June 1, 2015 and is subject to the limitations in **Attachment 1**. GZA originally submitted a letter report to the Client on July 24, 2015. Revision 1 includes the contents of the original letter report and includes additional analyses as requested by the Client. Revision 1 supersedes the original submission.

BACKGROUND

The Hockanum River flows from Paper Mill Pond, under the Grove Street Bridge, through a man-made sluiceway, through a courtyard in the Amerbelle Mill complex, under an archway, and into a pond that is impounded by the Ano-Coil Dam – See **Figures 1** and **2**. Part of the sluiceway is underneath buildings. The concrete Paper Mill Pond Dam spillway is located in sluiceway at the courtyard. GZA performed this analysis to evaluate the potential removal of the spillway portion of the Paper Mill Pond Dam in an effort to reduce the flood profile along the Hockanum River channel within the Amerbelle site.

All elevations in the text of this letter report are referenced to the North American Vertical Datum of 1988 (NAVD88) unless stated otherwise. Elevations referenced to the NAVD88 datum can be converted to elevations referencing the NGVD29 datum by adding 0.76 feet (i.e. Elevation 473.2 feet NAVD88 = Elevation 474.0 feet NGVD29, rounded).

DESCRIPTION OF EXISTING CONDITIONS

The existing conditions geometries and elevations used by GZA to build the HEC-RAS model are from the following references:

1. Interim Conditions Assessment and Repair Evaluation Report for Paper Mill Pond Dam, by K.F. Acimovic, P.E., (June 2014);
2. Drawings for the Replacement of Route 31 over the Hockanum River, CTDOT, 1993;
3. Phase 1 Inspection Report, Paper Mill Pond Dam, USACE, March, 1981;
4. FEMA Flood Insurance Study for the Town of Vernon, CT, revised August 9, 1999; and
5. Town of Vernon Engineering Dept. topographic map of Amerbelle Site, April 2015-Interim.
6. Site survey obtained in January 2016.

Based on the Phase I report, the existing dam includes a 17 foot long concrete spillway and a concrete platform for outlet works control. The height of the spillway and platform are 11.2 feet and 16.7 feet. Stone and concrete building foundations form the abutments at each end of the dam. The spillway has a low-level outlet of unknown size. The spillway controls the hydraulic head of the raceway upstream of the dam and the Paper Mill Pond.

Some pertinent geometries and elevations of the existing conditions are listed below and included in Attachments 1 and 2:

Grove Street Bridge Span Length	37.2 feet
Grove Street Upstream Bottom Chord Elevation	481.1 – 481.9 feet
Sluiceway Span Length	19.3 - 29.1 feet
Sluiceway Upstream Crown Elevation	480.8 – 481.2 feet
Spillway Crest Elevation	473.2 feet
Spillway Crest Length	17 feet
Spillway Low-Level Outlet Invert Elevation	464.2 feet
Arch Outlet Span Length	14 feet
Arch Outlet Maximum Height	about 9 feet
Arch Outlet Upstream Crown Elevation	463.4 feet

No data was available for the Ano-Coil Dam. The dam was modelled as 50 feet long (based on an aerial photo) and with a spillway crest at elevation 427 feet (based on the normal pool for the pond as demonstrated by contour data).

DESCRIPTION OF PROPOSED CONDITIONS

The Town of Vernon wants to relocate the dam to 250 feet upstream of the current location. The new location is within the man-made sluiceway, about 10 feet downstream of where the sluiceway begins. The location is downstream of the Grove Street Bridge. Originally, the Town was interested in relocating the dam upstream of the Grove Street Bridge. However, this alternative was discontinued because the Town does not own the land in that location. The property line of the mill site begins on the downstream side of Grove Street. A plan view showing the general location of the proposed dam is in Figure 2.

The proposed dam will include a reinforced concrete ogee weir adjacent to a concrete platform supporting a low-level outlet gate. The total width of the sluiceway at the proposed location is 29.1 feet. The proposed dam will have the following geometries and elevations:

Spillway Crest Elevation	473.2 feet
Spillway Crest Length	20 feet
Low-level outlet Gate Size	2 feet x 2 feet
Low-level Outlet Gate Invert	469.5 feet
Width of Concrete Platform Supporting Gate	9.1 feet

HYDROLOGIC INPUTS

GZA acquired the estimated peak discharge for the Upper Hockanum River from the FEMA FIS for the Town of Vernon. The flows are as follows:

Return Period	FEMA 1999 FIS Peak Discharge
10-year	260 cfs
50-year	780 cfs
100-year	1,150 cfs
500-year	2,200 cfs

GZA also acquired the 50% exceedance flow (i.e. baseflow) for the Upper Hockanum River from the Connecticut StreamStats web application. The flows are as follows:

Months	50% Exceedance Flow
November	17 cfs
December – February	24 cfs
March – April	46 cfs
May	31 cfs
June	13 cfs
July – October	6 cfs

Under Connecticut regulations, no formal guidance is given for Spillway Design Flood (SDF) classification. Based on the small size of the proposed dam and its small impoundment, GZA has used the 100 year flood as the SDF to evaluate the spillway adequacy and overtopping potential of the dam.

SPILLWAY HYDRAULIC ANALYSIS

The water surface profile for this section of the Hockanum River was developed by GZA using the HEC-RAS computer program. The HEC-RAS model starts about 125 feet upstream of the Grove Street Bridge entrance and ends immediately downstream of the Ano-Coil Dam.

The Paper Mill Pond Dam and Ano-Coil Dam were both modelled with weir coefficients equal to 3.3. The Manning's n hydraulic roughness values for the model were estimated by GZA based on the observations made in the Supplemental Diving Report (and videos) for Paper Mill Pond Dam, by K.F. Acimovic, P.E., (October 2014) and are generally consistent with those used by FEMA in the river channel sections.

GZA ran the model using a steady-state and mixed flow (i.e. sub- & super-critical) regime.

To compare the GZA model with the FEMA profile for the Upper Hockanum River at the site, GZA first routed the peak discharges for the 10-, 50-, 100-, and 500-year floods.

The resultant water surface profiles for the existing conditions are presented in **Figure 3**. The profile demonstrates that pressure flow occurs both at the Grove Street Bridge, and in the subterranean channel for the 500-year flow. While pressure flow does not occur at the archway portion of the closed channel (downstream from the dam), its inlet capacity is exceeded for the 500-year flood event. This produces a pronounced headwater condition due to head losses at the entrance to the archway. For the 100- and 50-year flows, pressure flow occurs only in a portion of the subterranean channel. Pressure flow does not occur for the 10-year flow. GZA compared our resultant water profiles, at three representative locations,

with those published in the FEMA FIS. The results of that comparison are provided in **Table 1**. The resultant water surface profiles in Table 1 indicate that the Paper Mill Pond Dam spillway appears to have less capacity as modeled by GZA than published in the FEMA FIS. This is evident by the fact that the FEMA water surface elevations are lower than the GZA elevations. It is GZA's opinion that our analysis is more accurate because the spillway crest elevation and length is based on drawings. It is unknown how FEMA established the crest of the spillway, or if FEMA modelled the spillway crest at all. The FEMA profile does not include any information on the spillway.

GZA first ran the model with the existing spillway removed. The spillway crest was lowered from its crest at 473.2 feet to the bedrock elevation, at about elevation 464 feet. Photos from the supplemental diving report of the site show bedrock at the base of the spillway. The buildings above the sluiceway were removed as well because the dam relocation is part of the larger demolition and redevelopment of the site. The resultant water surface profiles for the various return period floods are presented in **Figure 4**. As expected, the water surface profiles are significantly reduced within the mill building complex and upstream of Grove Street with the removal of the existing Paper Mill Pond Dam concrete spillway. The profiles in Figure 4 demonstrate that pressure flow only occurs under conditions of the 500-year flow at the Brooklyn Street Bridge. Pressure flow has been eliminated at the Grove Street Bridge. The hydraulic characteristics downstream from the location of the dam (station 358 ft.) are unchanged from existing conditions.

Next, GZA ran the model with the existing spillway removed and the proposed spillway included. The proposed spillway is 250 feet upstream of the existing spillway's location. The new location is downstream of the Grove Street Bridge and upstream of the Brooklyn Street Bridge. GZA assigned a weir coefficient of 3.3 to the proposed spillway. GZA did not model flow through the proposed low-level outlet gate. The resultant water surface profiles are presented in **Figure 5**. The profile demonstrates that pressure flow occurs both at the Grove Street Bridge and Brooklyn Street Bridge for the 500-year flood event. For the lesser floods, pressure flow does not occur.

The proposed conditions profiles for the 500-, 100-, 50-, and 10-year floods were compared to the existing conditions profile and are presented in **Table 2**. This comparison indicates the proposed relocation of the Paper Mill Pond Dam spillway will result in reduced flood elevations.

HEC-RAS input/output files are in **Attachment 5**.

LOW-LEVEL OUTLET GATE HYDRAULIC ANALYSIS

GZA used the Bentley Culvert-Master v3.3 computer program to estimate the discharge capacity of various low-level outlet gate sizes. For the low-level outlet gate analysis, GZA used the 50% exceedance for the Hockanum River. The Culvert-Master program requires that a tailwater condition be provided. GZA routed the baseflow through the HEC-RAS model which did not include any spillways to develop the expected tailwater for the low-level outlet. The hydraulic profiles from this run are presented in **Figure 6**. Then, GZA used the Culvert-Master program to estimate the necessary headwater for each baseflow. GZA evaluated gates of various widths. The height of the gate will be about 4 feet because the spillway is about 4 feet high. The results are presented in **Table 3**.

Based on the results, GZA reasoned a 4 foot by 4 foot gate provided the necessary flow capacity.

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CONCLUSIONS

The water surface profile analysis demonstrates that relocation of the Mill Pond Dam spillway reduces the water surface elevations for the 10-, 50-, 100-, and 500-year flows at the site without increasing the elevations upstream of downstream of the site. A low-level outlet gate sized 4 feet by 4 feet provides the necessary capacity to pass baseflow through the dam. The SDF inflow is 1,150 cfs. With the proposed dam relocation, the estimated headwater (i.e. elevation in Paper Mill Pond) will be 480.0 feet (See Table 2).

Please contact the undersigned if you have any questions or comments concerning our analysis.

Very Truly Yours,

GZA GeoEnvironmental, Inc.

Christine Suhonen, EIT
Hydraulic Engineer

Chad Cox, P.E. (MA)
Consultant/Reviewer

Peter H. Baril, P.E.
Principal-in-Charge

cc: Christopher Frey (GZA)

Figures

Figure 1: Locus Map
Figure 2: Existing and Proposed Conditions Plan View
Figure 3: Existing Conditions Water Surface Profile
Figure 4: Existing Conditions with Dam Removal Water Surface Profile
Figure 5: Proposed Conditions Water Surface Profile
Figure 6: Water Surface Profile of Baseflow without Any Dam

Tables

Table 1: Existing Conditions Water Surface Elevation Comparison to FEMA
Table 2: Proposed Conditions Water Surface Elevation Comparison to FEMA
Table 3: Existing and Proposed Conditions Water Surface Elevation Comparison

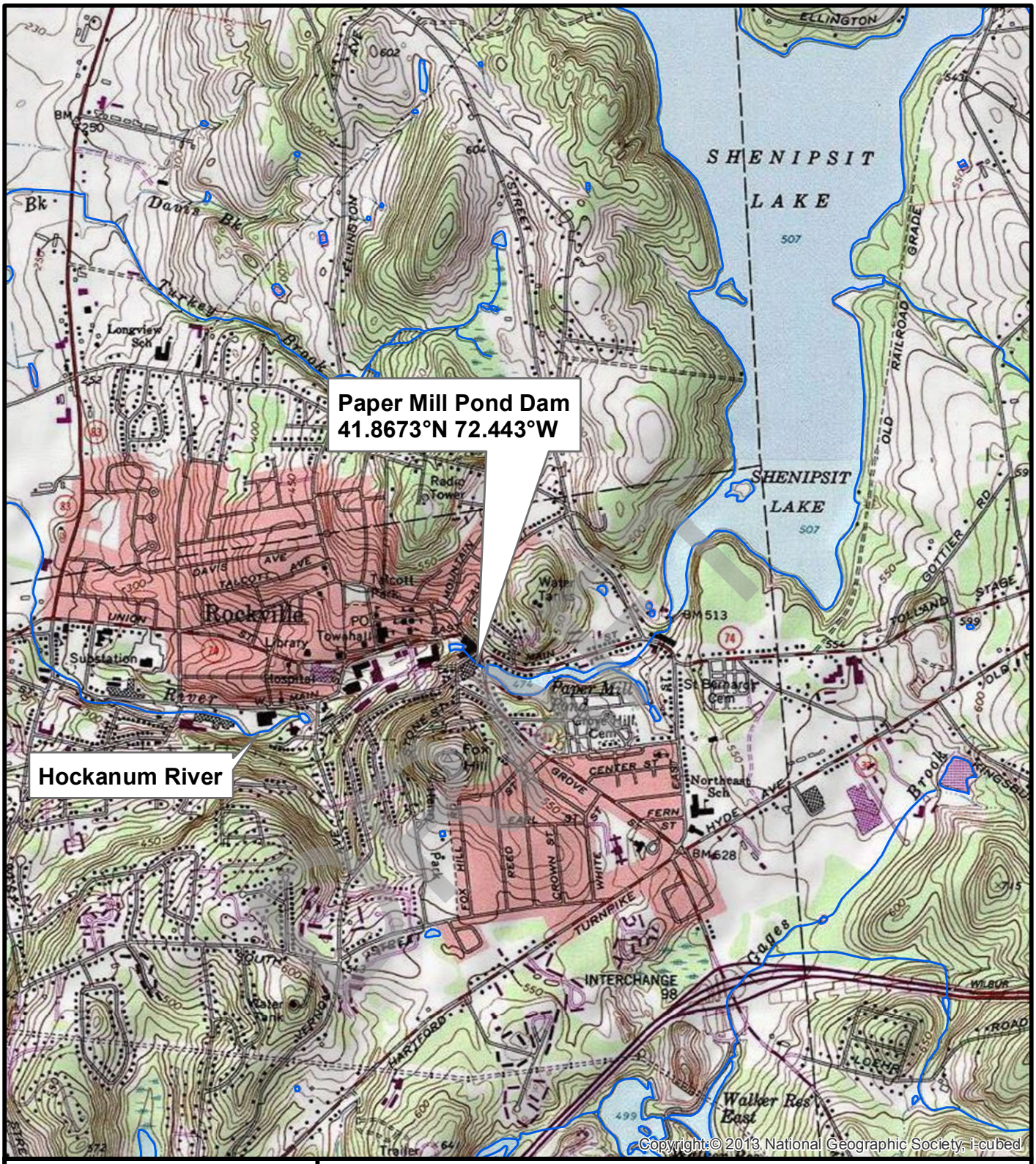
Attachments

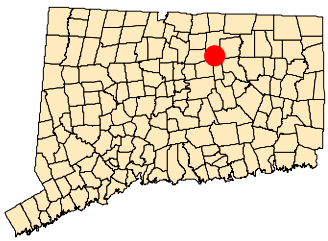
Attachment 1: Limitations
Attachment 2: References for Geometry
Attachment 3: Contour Map of Site

Attachment 4: HEC-RAS Input and Output Files

Attachment 5: Culvert Master Inputs and Outputs

FIGURES





0 1,000 2,000 4,000 Feet

Basemap from ESRI USA Topo Maps

N
W E
S

PROJ. MGR.: PHB
DESIGNED BY: CES
REVIEWED BY: PHB
OPERATOR: CES
DATE: 02/2/2016

LOCUS MAP
PAPER MILL POND DAM, CT DEEP #14606

FORMER AMERBELLE MILL
TOWN OF VERNON, CONNECTICUT

JOB NO.
05.0045441.01

FIGURE NO.
1

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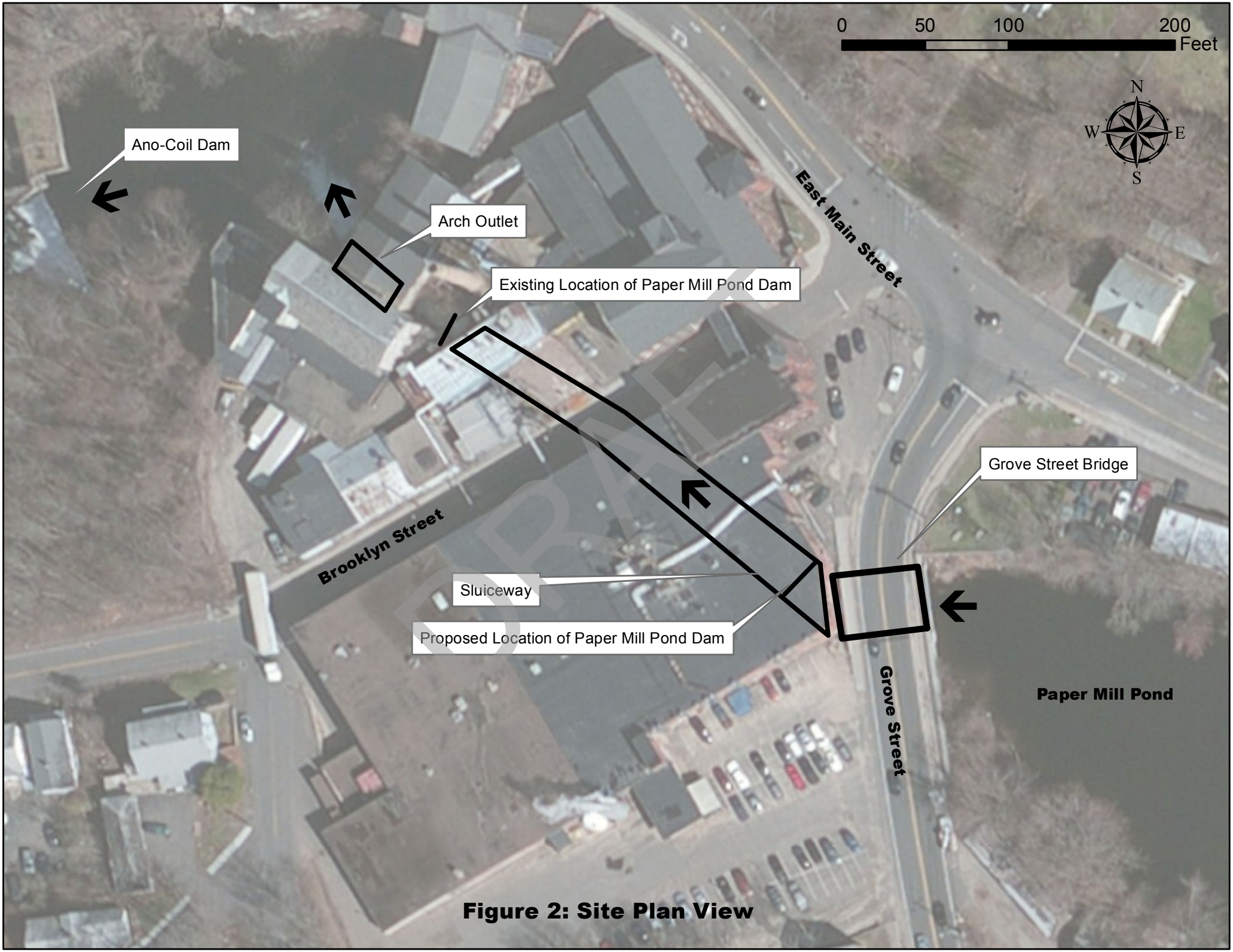
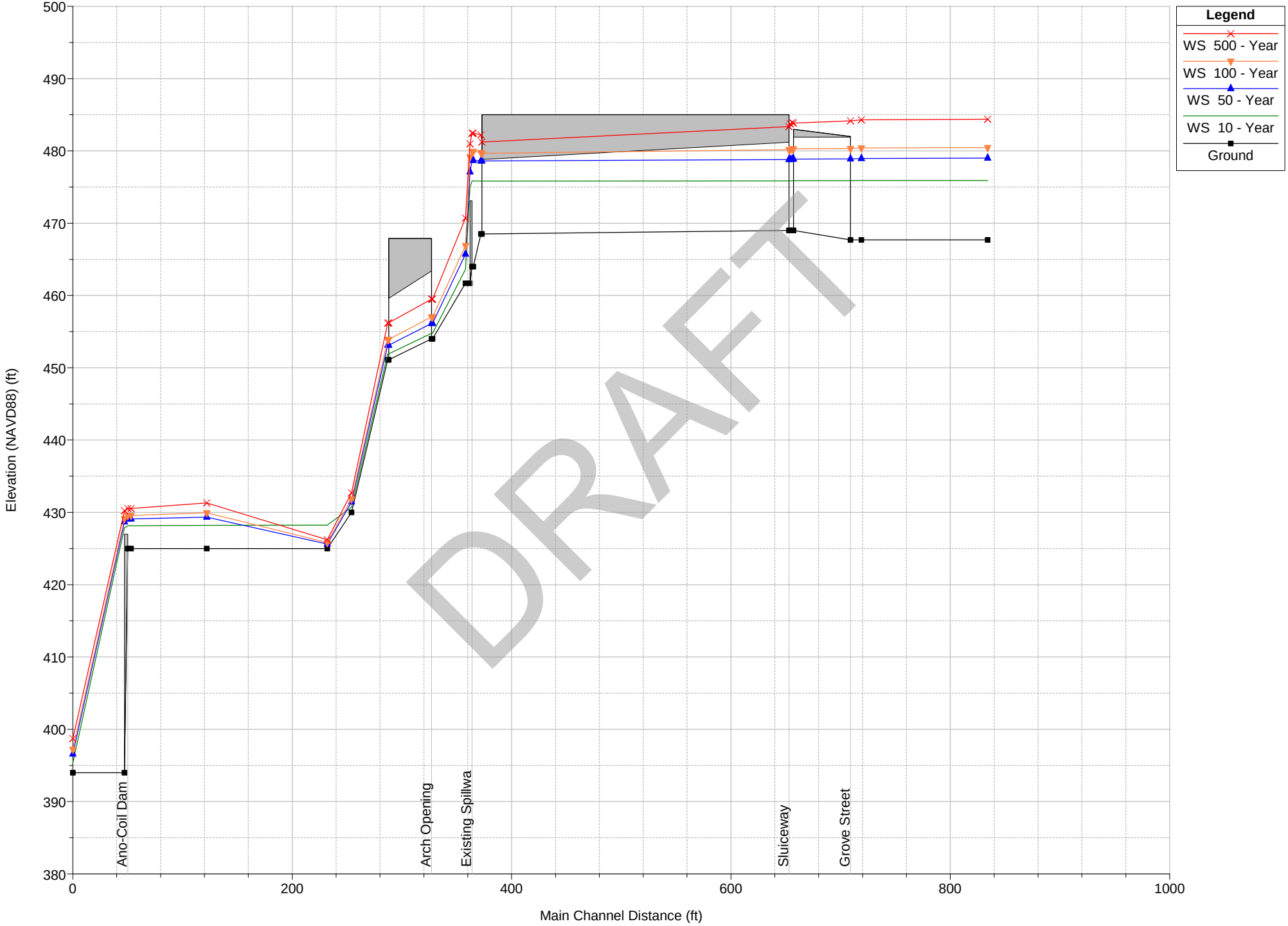


Figure 2: Site Plan View

AmerbelleSite Plan: New - Existing Conditions 2/4/2016 11:30:38 AM

Geom: Updated Existing Conditions



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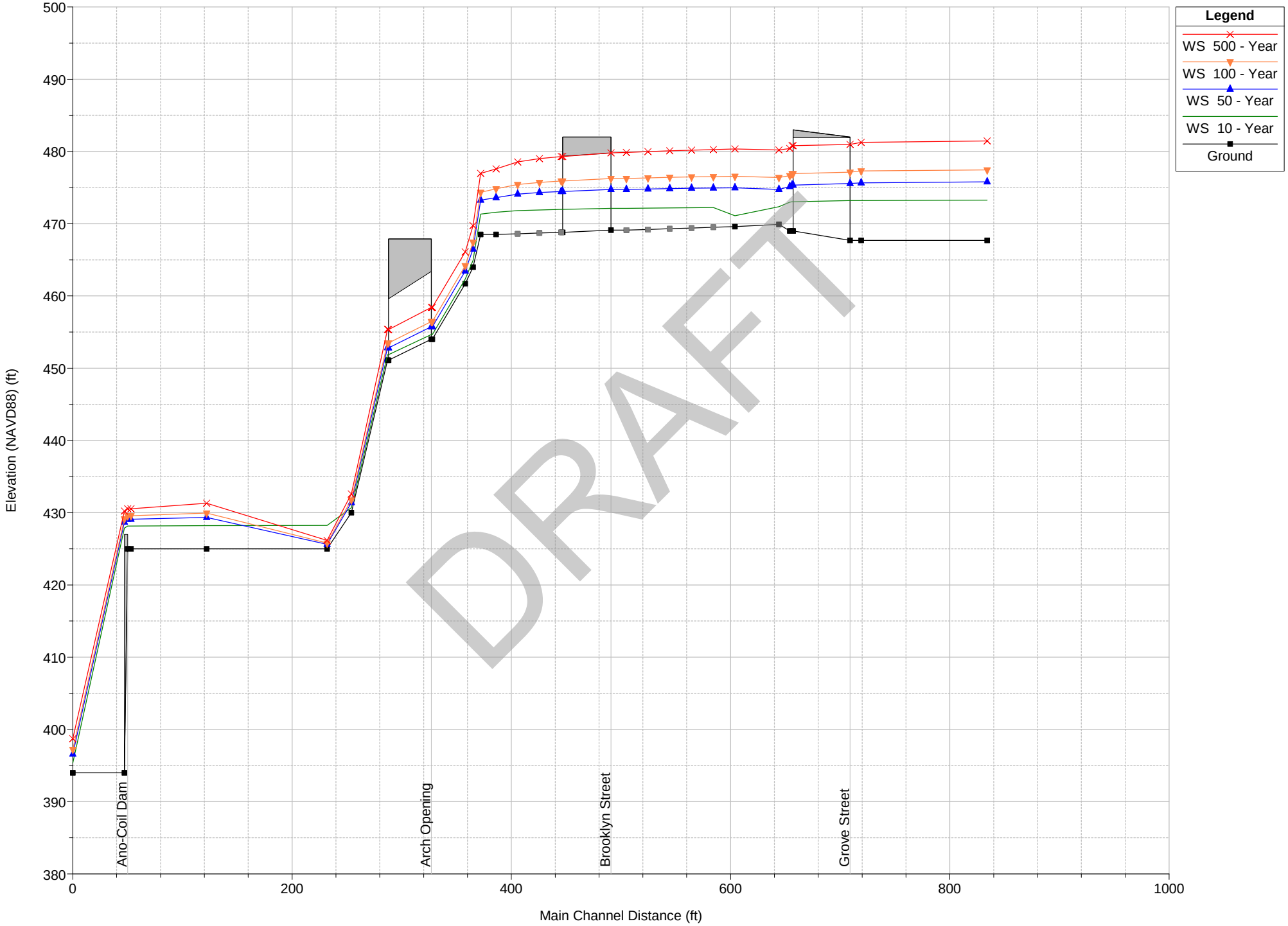

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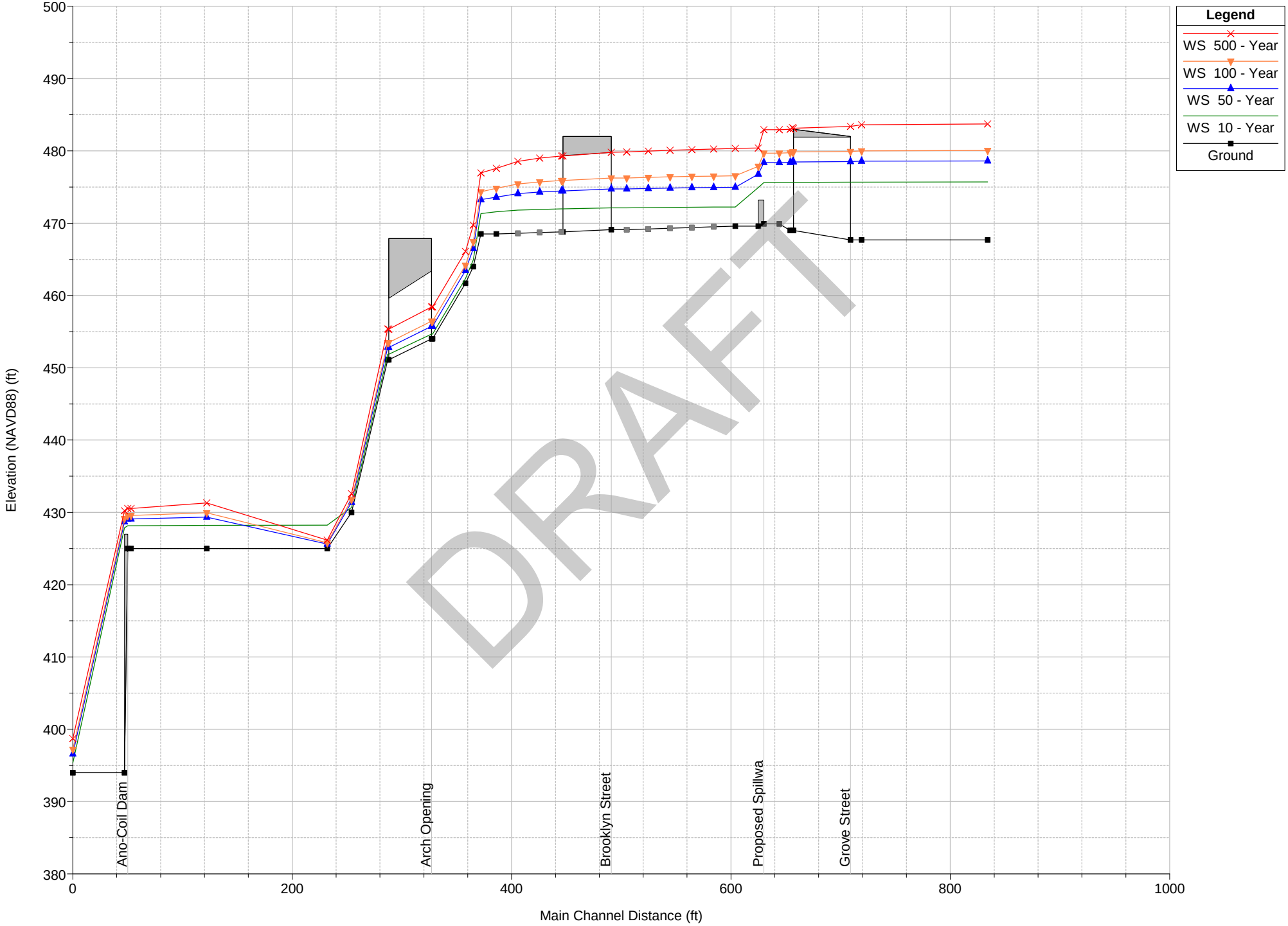
Geom: Updated Proposed Condtions



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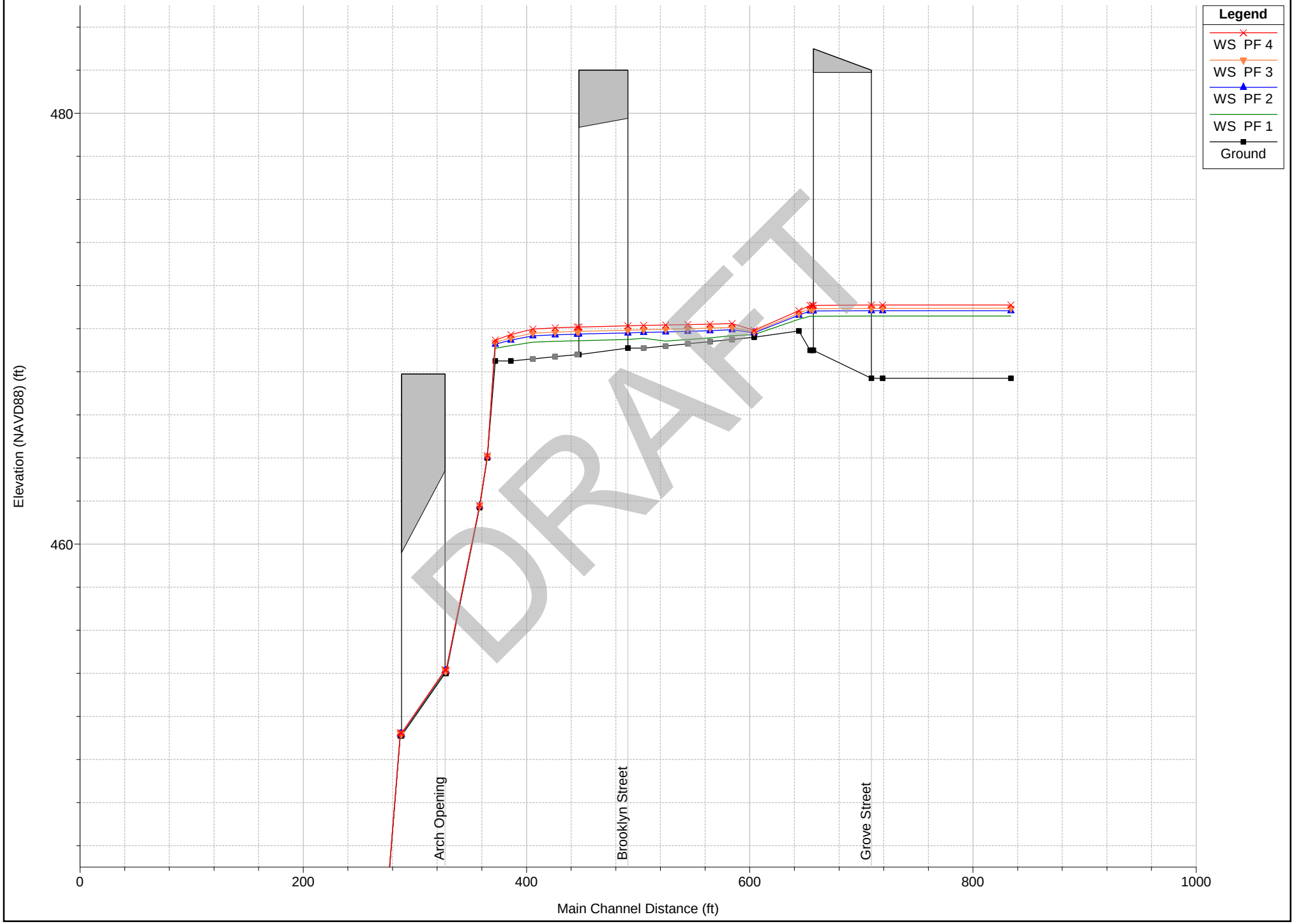
Geom: Updated Existing Conditions No Spillway



TABLES

Table 1: Existing Conditions Water Surface Elevation Comparison to FEMA (feet)

	Location	Upstream Grove Street	Upstream Current Spillway Location	Upstream Ano-Coil Dam
	HEC-RAS Station	719	365	53
	Distance from Current Spillway	355 feet upstream	1 foot upstream	311 feet downstream
10-Year	FEMA Existing	475.0	475.0	429.2
	GZA Existing	475.9	475.9	428.1
	Difference	**0.9**	**0.9**	**-1.1**
50-Year	FEMA Existing	478.6	476.7	429.2
	GZA Existing	479.0	478.7	429.1
	Difference	**0.4**	**2.0**	**-0.1**
100-Year	FEMA Existing	480.6	477.0	429.2
	GZA Existing	480.4	479.9	429.6
	Difference	**-0.2**	**2.9**	**0.4**
500-Year	FEMA Existing	483.7	479.2	430.2
	GZA Existing	484.3	482.4	430.6
	Difference	**0.6**	**3.2**	**0.4**

*Difference = GZA Existing – FEMA Existing

Table 2: Water Surface Elevation Comparison between Existing and Proposed Conditions (feet)

	Location	Upstream Grove Street	Upstream Current Spillway Location	Upstream Ano-Coil Dam
	HEC-RAS Station	719	365	53
	Distance from Current Spillway	355 feet upstream	1 foot upstream	311 feet downstream
10-Year	GZA Existing	475.9	475.9	428.1
	GZA Proposed	475.7	464.9	428.1
	Difference	**-0.2**	**-10.9**	**0.0**
50-Year	GZA Existing	479.0	478.7	429.1
	GZA Proposed	478.6	466.5	429.1
	Difference	**-0.4**	**-12.2**	**0.0**
100-Year	GZA Existing	480.4	479.9	429.6
	GZA Proposed	480.0	467.4	429.6
	Difference	**-0.4**	**-12.5**	**0.0**
500-Year	GZA Existing	484.3	482.4	430.6
	GZA Proposed	483.6	469.8	430.6
	Difference	**-0.7**	**-12.7**	**0.0**

*Difference = GZA Proposed – GZA Existing

Table 3: Low-Level Outlet Gate Capacity

		Spillway Headwater with Various Culvert Sizes (W x H), feet				
Flow, cfs	Tailwater, feet	4x4	5x4	6x4	7x4	8x4
6	469.73	470.2	470.1	470.1	470.0	470.0
13	469.81	470.7	470.5	470.4	470.3	470.3
17	469.86	470.9	470.7	470.6	470.5	470.4
24	469.93	471.3	471.1	470.9	470.8	470.6
31	469.99	471.7	471.4	471.1	471.0	470.9
46	470.11	472.3	471.9	471.6	471.4	471.3
Culvert Crown Elevation, feet		473.5	473.5	473.5	473.5	473.5

ATTACHMENT 1: LIMITATIONS

FLOOD EVALUATION LIMITATIONS

Use of Report

1. GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of the Client for the stated purpose(s) and location(s) identified in the Report. Use of this Report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

Standard of Care

2. Our findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Report and/or proposal, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. The interpretations and conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of the described services. The work described in this report was carried out in accordance with the agreed upon Terms and Conditions of Engagement.

4. GZA's flood evaluation was performed in accordance with generally accepted practices of qualified professionals performing the same type of services at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. The findings of the risk characterization are dependent on numerous assumptions and uncertainties inherent in the risk assessment process. The findings of the flood evaluation are not an absolute characterization of actual risks, but rather serve to highlight potential sources of risk at the site(s).

5. Unless specifically stated otherwise, the flood evaluations performed by GZA and associated results and conclusions are based upon evaluation of historic data, trends, references, and guidance with respect to the current climate and sea level conditions. Future climate change may result in alterations to inputs which influence flooding at the site (*e.g*. rainfall totals, storm intensities, mean sea level, *etc*.). Such changes may have implications on the estimated flood elevations, wave heights, flood frequencies and/or other parameters contained in this report.

Reliance on Information from Others

6. In conducting our work, GZA has relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Any inconsistencies in this information which we have noted are discussed in the Report.

Compliance with Codes and Regulations

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations with codes and regulations by other parties are beyond our control.

Additional Information

8. In the event that the Client or others authorized to use this report obtain information on conditions at the site(s) not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the opinions stated in this report.

Additional Services

9. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

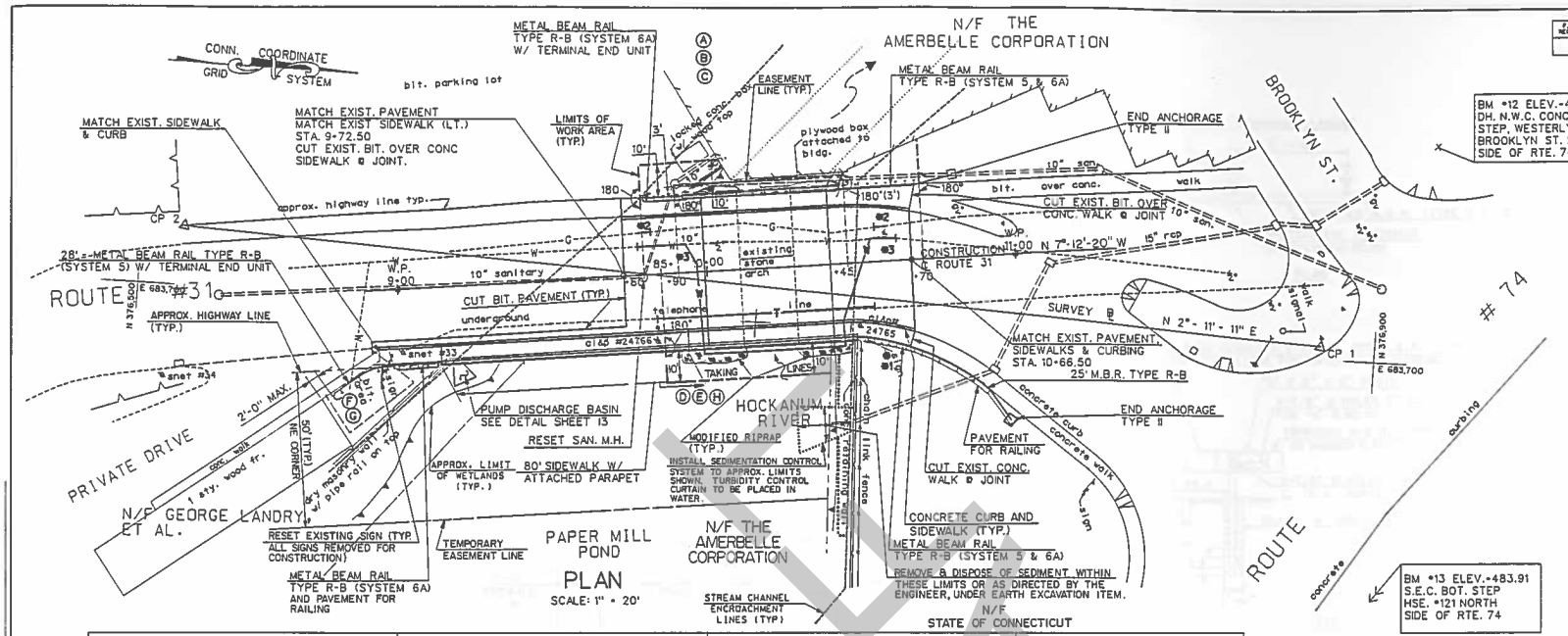
ATTACHMENT 2: REFERENCES FOR GEOMETRY

STATE OF CONNECTICUT - DEPT. OF TRANSPORTATION

F. HW. A. REGION NO.	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.
1	CONN	VERNON	IXAF-IKAM-0005 (514)	171-205	1993	31	11

ROUTE 31 OVER HOCKANUM RIVER

SCALE IN FEET
40 20 0 40



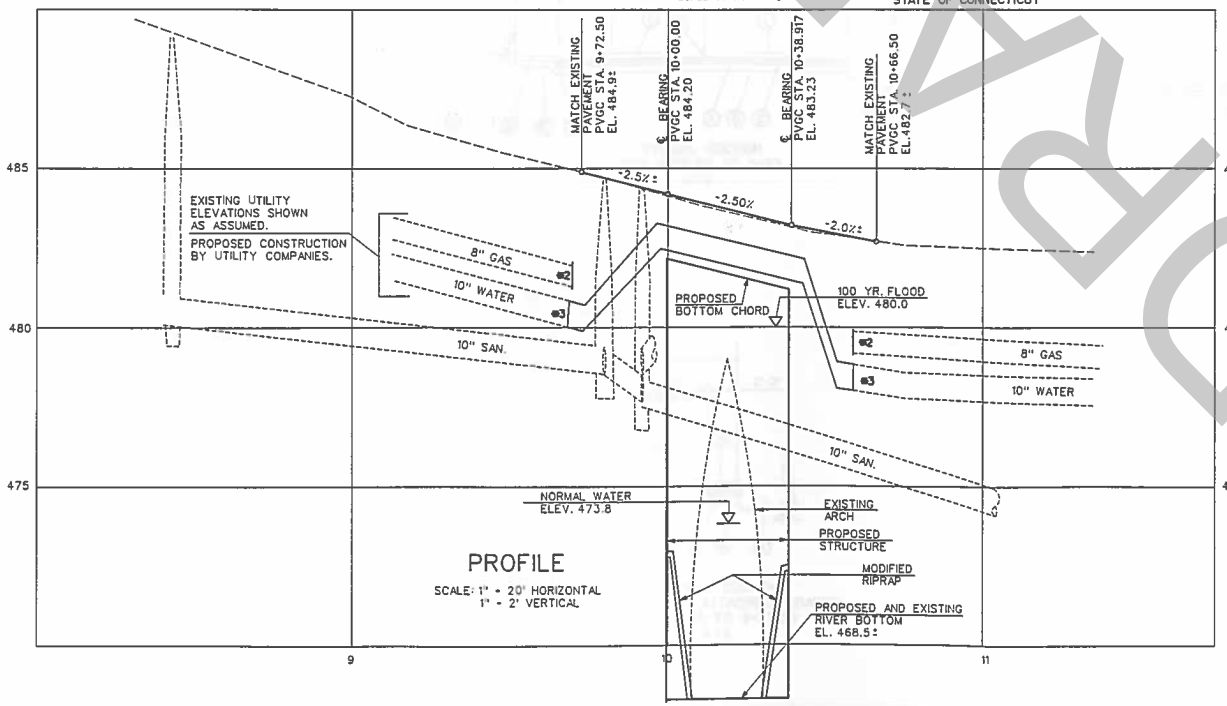
EASEMENTS & RIGHTS

- (A) EASEMENT FOR TEMPORARY WORK AREA FOR THE PURPOSE OF BRIDGE CONSTRUCTION, PLACEMENT OF RIPRAP, INSTALLATION OF COFFERDAMS AND TEMPORARY SHEET PILING, AND REMOVING AND RESETTING CHAIN LINK FENCE DURING THE REPLACEMENT OF BRIDGE NO. 3238 REQUIRED.
- (B) DEFINED EASEMENT FOR HIGHWAY PURPOSES AND APPURTENANCES REQUIRED.
- (C) EASEMENT TO INSTALL METAL BEAM RAIL AND END ANCHORAGE REQUIRED
- (D) RIGHT TO INSTALL SEDIMENTATION CONTROL SYSTEM REQUIRED.
- (E) RIGHT TO REMOVE AND RETAIN SEDIMENT REQUIRED.
- (F) EASEMENT TO INSTALL METAL BEAM RAIL AND SIGN REQUIRED.
- (G) RIGHT TO INSTALL PUMP DISCHARGE BASIN REQUIRED.
- (H) EASEMENT FOR TEMPORARY CONSTRUCTION OF PEDESTRIAN BRIDGE INCLUDING THE RIGHT TO INSTALL ALL NECESSARY APPURTENANCES THERETO REQUIRED

NOTE: FOR ADDITIONAL ITEMS OF WORK AND PAYMENT METHODS, SEE STRUCTURAL SHEET NO. 7.

UTILITY NOTES:

1. NEW TEMPORARY POLE BY NORTHEAST UTILITIES (NOTE, CL&P #24766 &#24765 TO BE REMOVED AND RESET BY N.U. OVERHEAD WIRES TO BE DE-ENERGIZE BETWEEN SNET #33 & NEW TEMP. POLE BY N.U. OVERHEA CATV WIRES TO BE TEMPORARILY RELOCATED BY TCI CABLEVISION BETWEEN SNET #33 AND TEMP. POLE.)
2. 8" GAS MAIN TERMINATED BY YANKEE GAS.
3. WATER MAIN REPLACED BY CONNECTICUT WATER COMPANY

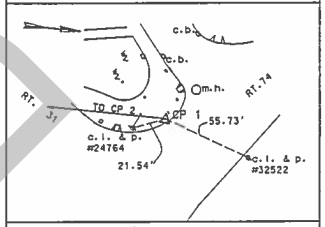


PROFILE

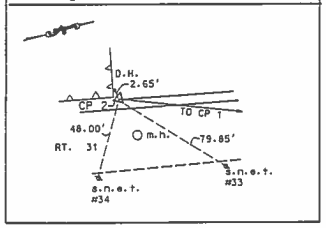
SCALE: 1" = 20' HORIZONTAL
1" = 2' VERTICAL

CONTROL POINT TIES

CP 1	P.K. NAIL	N 376,882.73
SURVEY @ STA. 23+69.08		E 683,695.52



CP 2	P.K. NAIL	N 376,513.90
SURVEY @ STA. 20+00.00		E 683,681.44



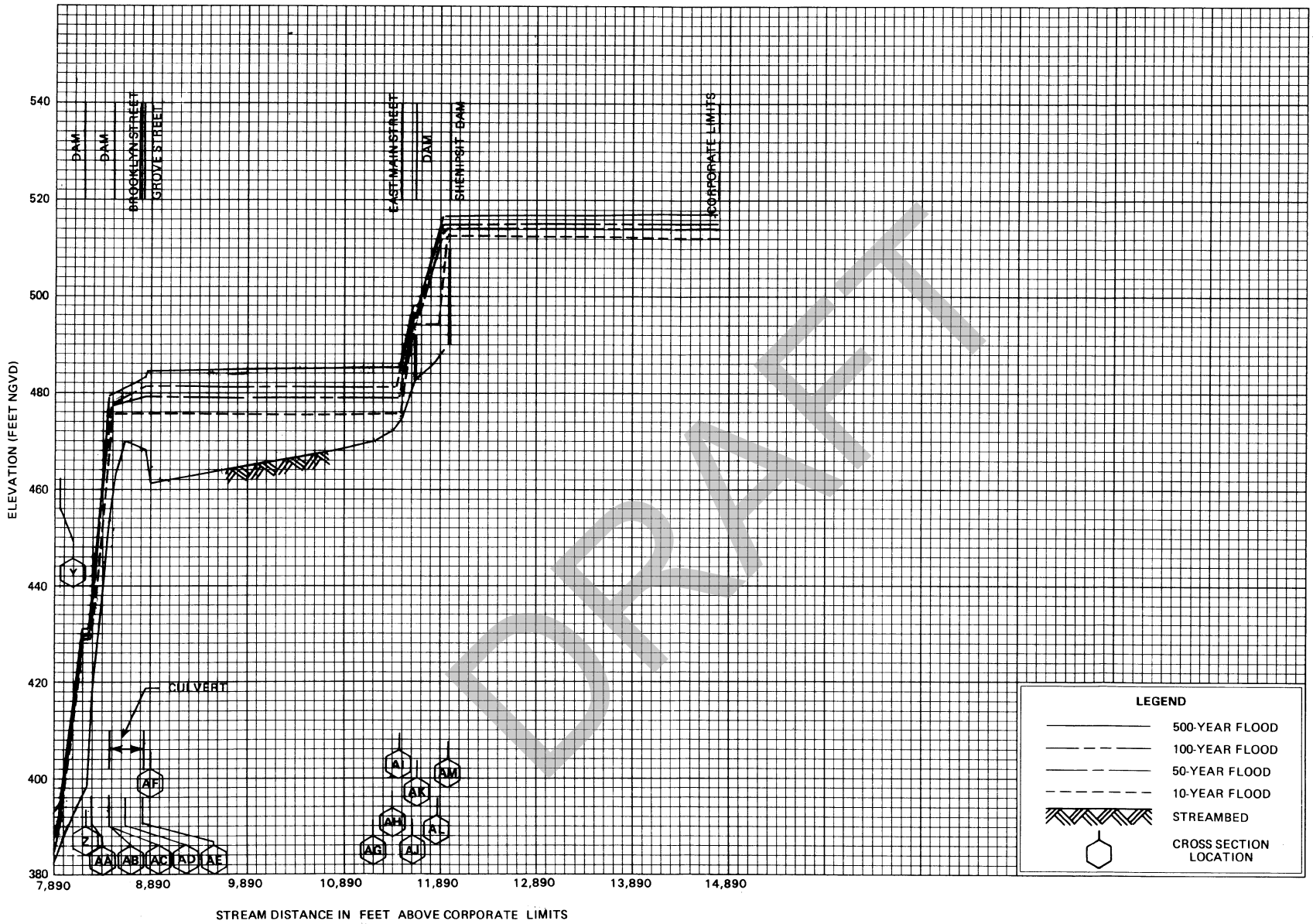
WORKING POINT LOCATIONS

CONSTRUCTION ℄ ROUTE 31	SURVEY BASELINE STATION & OFFSET
STA. 9+00.00	STA. 20+70.58 13.25' RIGHT
STA. 11+00.00	STA. 22+67.90 19.39' LEFT

NOTES:
ELEVATIONS ARE BASED UPON N.G.V.D. 1929.

PREPARED BY :
L-C ASSOCIATES, INC., ROCKY HIL

REVISIONS		
NO.	DATE	DESCRIPTION



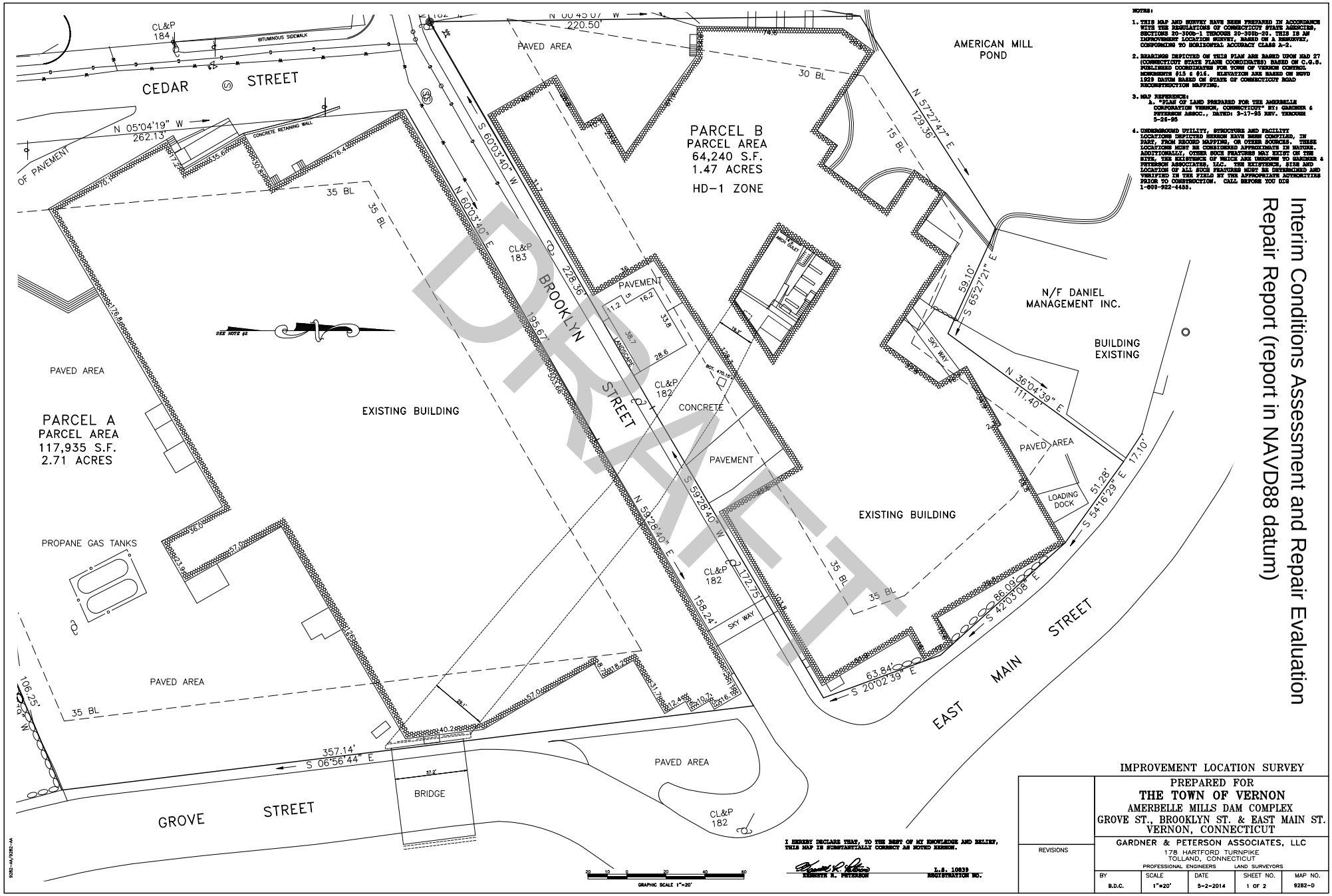
FLOOD PROFILES

UPPER HOCKANUM RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF VERNON, CT
(TOLLAND CO.)

06P



NOTES:

1. THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20. THIS IS AN IMPROVEMENT LOCATION SURVEY, BASED ON A RESURVEY, CONFORMING TO HORIZONTAL ACCURACY CLASS A-2.
2. BEARINGS DEPICTED ON THIS PLAN ARE BASED UPON NAD 27 (CONNECTICUT STATE PLANE COORDINATES) BASED ON C.G.S. PUBLISHED COORDINATES FOR TOWN OF VERNON CONTROL MONUMENTS #15 & #16. ELEVATIONS ARE BASED ON NGVD 1929 DATUM BASED ON STATE OF CONNECTICUT ROAD RECONSTRUCTION MAPPING.
3. MAP REFERENCES:
   A. "PLAN OF LAND PREPARED FOR THE AMERBELLE CORPORATION VERNON, CONNECTICUT" BY: GARDNER & PETERSON ASSOC., DATED: 3-17-95 REV. THROUGH 5-26-95
4. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING, OR OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO GARDNER & PETERSON ASSOCIATES, LLC. THE EXISTENCE, SIZE AND LOCATION OF ALL SUCH FEATURES MUST BE DETERMINED AND VERIFIED IN THE FIELD BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455.

Interim Conditions Assessment and Repair Evaluation
Repair Report (report in NAVD88 datum)

I HEREBY DECLARE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

KENNETH R. PETERSON L.S. 10839 REGISTRATION NO.

GRAPHIC SCALE 1"=20'

IMPROVEMENT LOCATION SURVEY

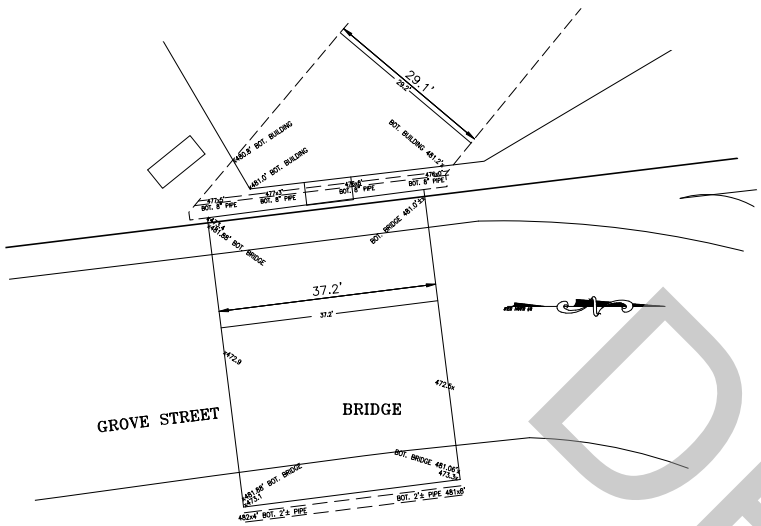
PREPARED FOR
THE TOWN OF VERNON
AMERBELLE MILLS DAM COMPLEX
GROVE ST., BROOKLYN ST. & EAST MAIN ST.
VERNON, CONNECTICUT

REVISIONS

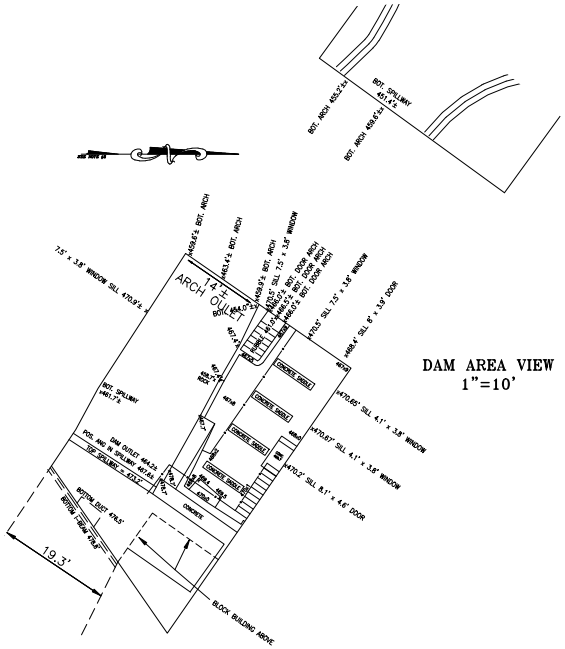
GARDNER & PETERSON ASSOCIATES, LLC
178 HARTFORD TURNPIKE
TOLLAND, CONNECTICUT
PROFESSIONAL ENGINEERS LAND SURVEYORS

BY	SCALE	DATE	SHEET NO.	MAP NO.
B.D.C.	1"=20'	5-2-2014	1 OF 2	9282-D

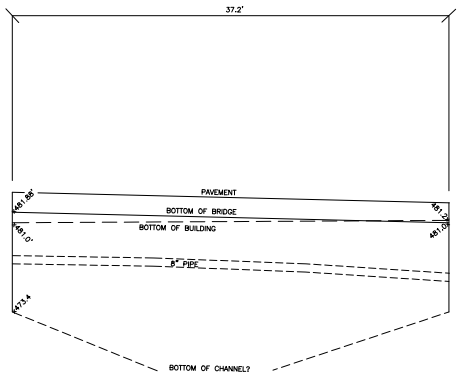
9282-AA/9282-AA



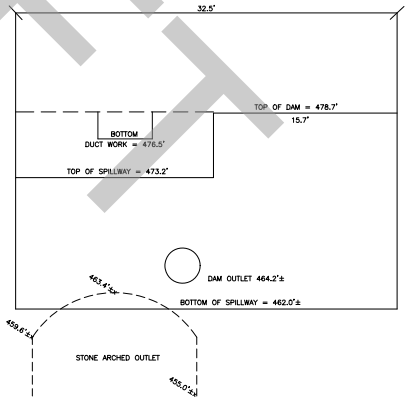
BRIDGE AREA VIEW
1"=10'



DAM AREA VIEW
1"=10'



WESTERLY SIDE OF BRIDGE
CROSS SECTION 1"=5'



DAM CROSS SECTION 1"=5'

I HEREBY DECLARE THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

KENNETH R. PETERSON — L.S. 10038 REGISTRATION NO.

40 20 0 40 80 120
GRAPHIC SCALE 1"=40'

IMPROVEMENT LOCATION SURVEY

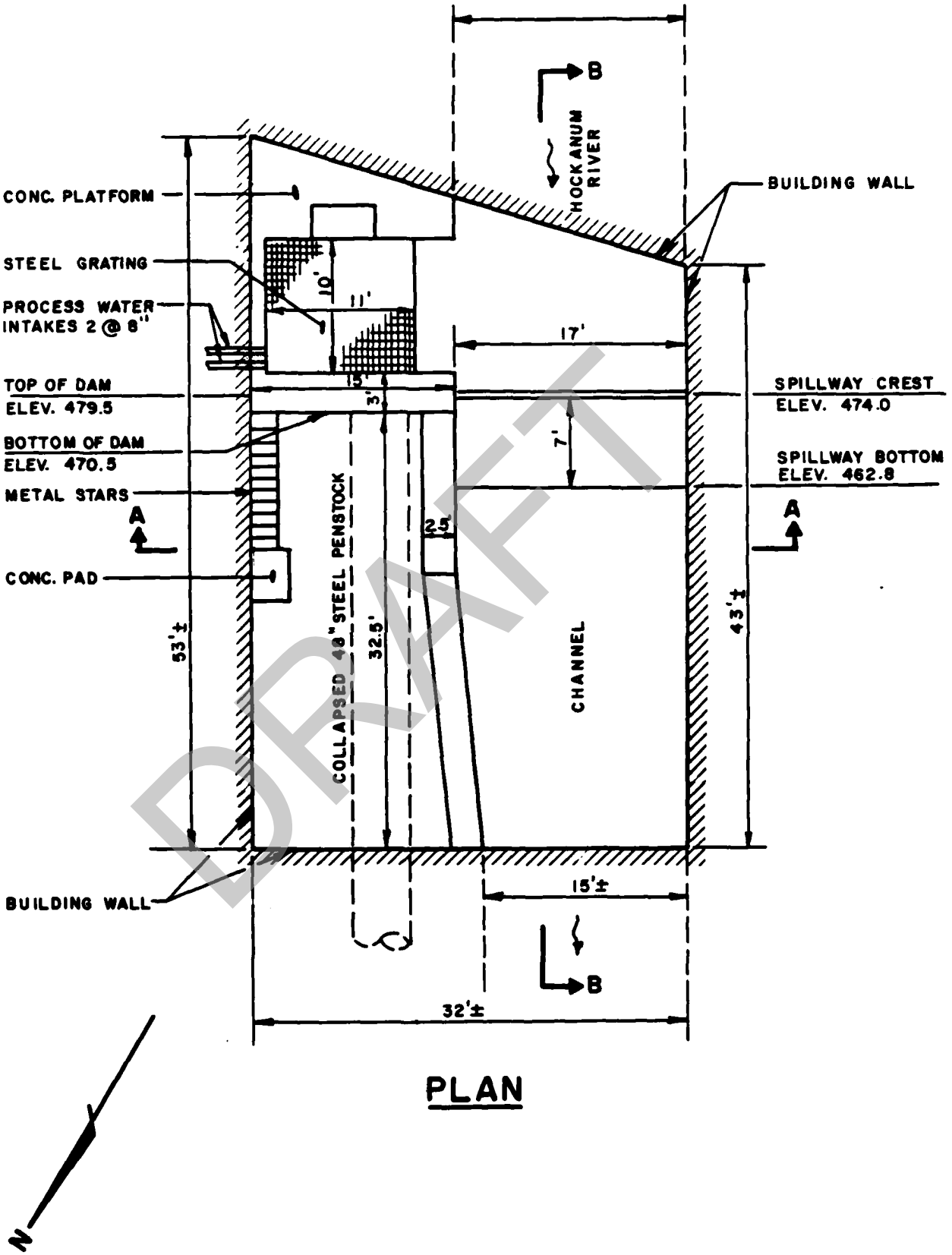
PREPARED FOR
THE TOWN OF VERNON
AMERBELLE MILLS DAM COMPLEX
GROVE ST., BROOKLYN ST. & EAST MAIN ST.
VERNON, CONNECTICUT

REVISIONS

GARDNER & PETERSON ASSOCIATES, LLC
178 HARTFORD TURNPIKE
TOLLAND, CONNECTICUT
PROFESSIONAL ENGINEERS LAND SURVEYORS

BY	SCALE	DATE	SHEET NO.	MAP NO.
B.D.C.	AS SHOWN	5-2-2014	2 OF 2	9282-D

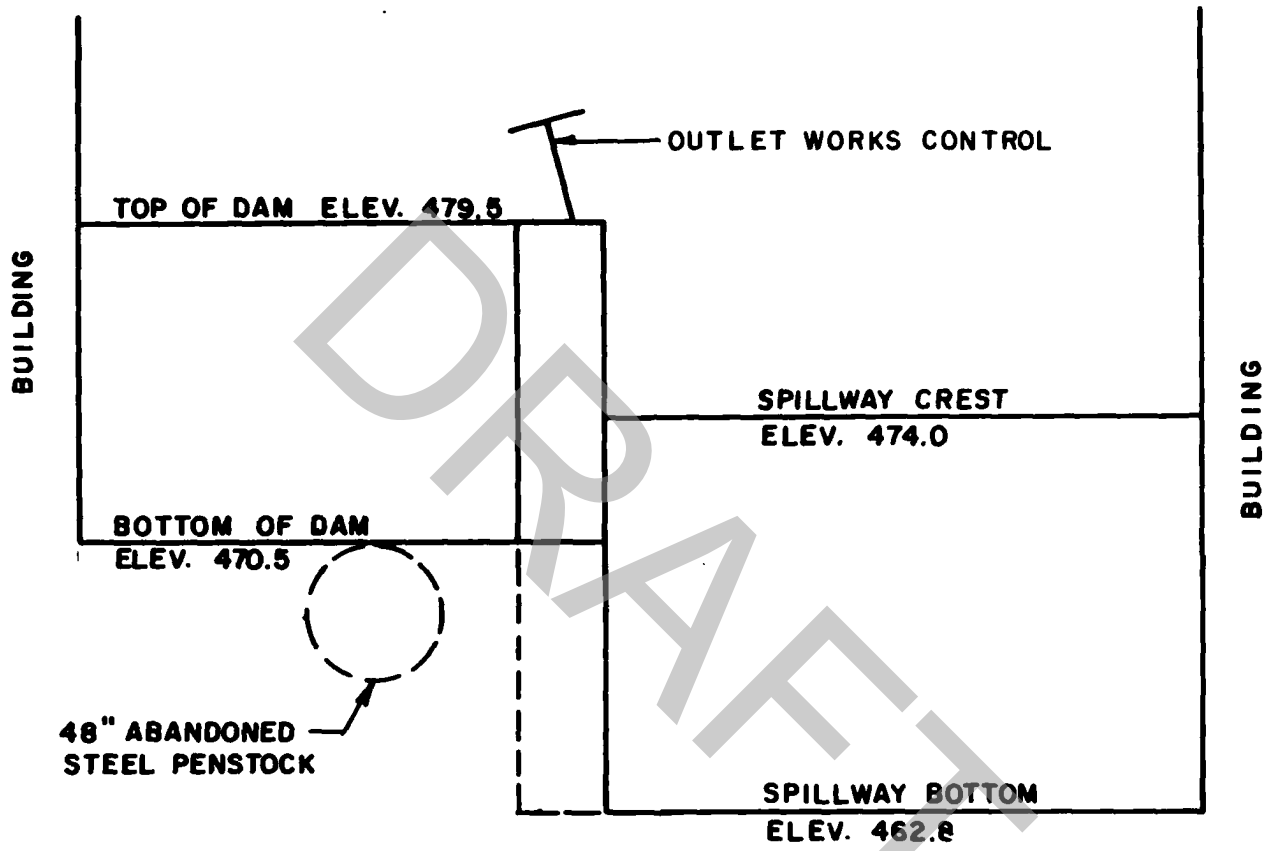
9282-AA/9282-AA



PLAN

PAPER MILL POND DAM

SCALE: 1"= 10' PLATE B-1

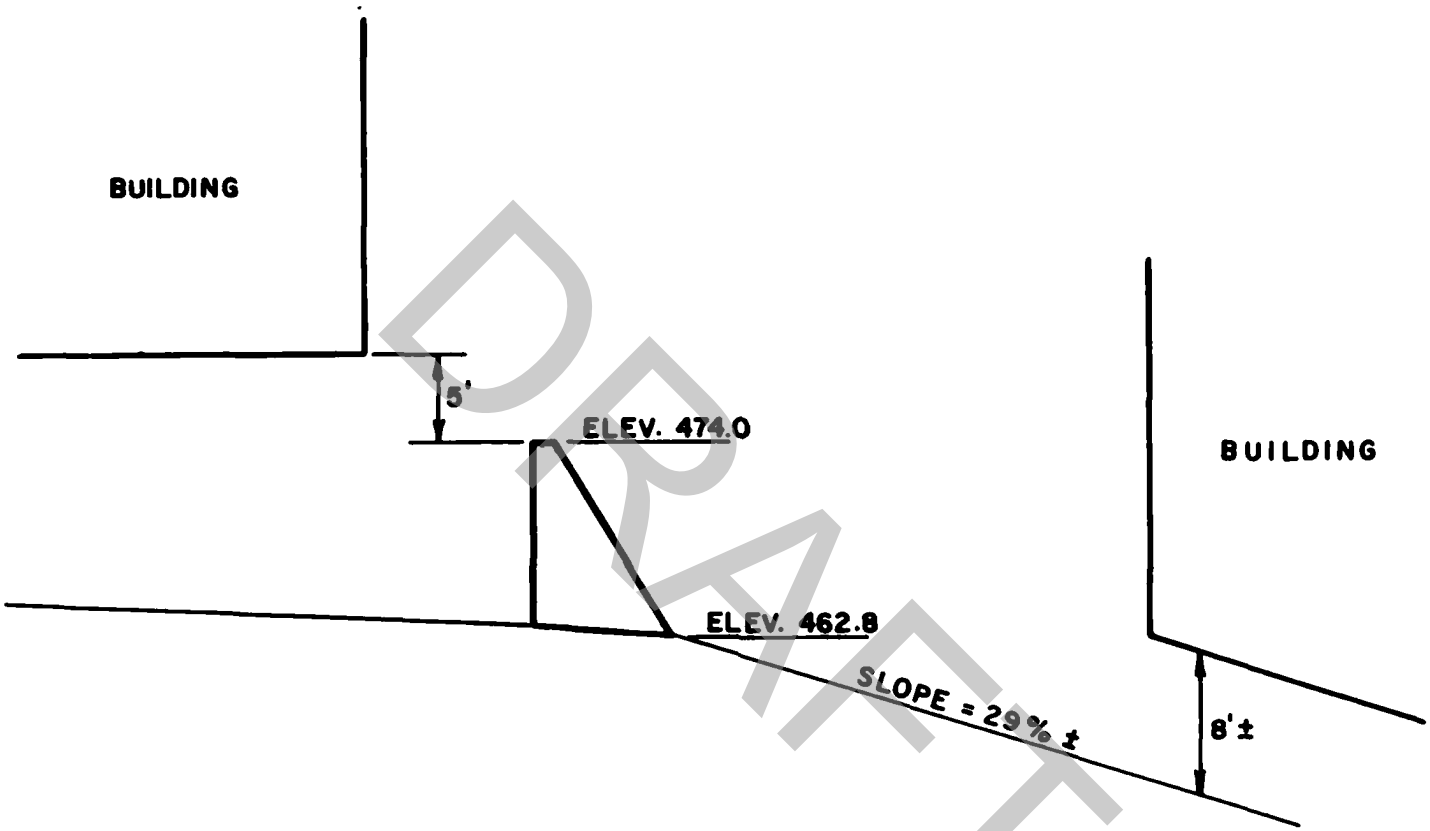


SECTION A-A

NOTE: OUTLET WORKS DETAILS UNKNOWN

PAPER MILL POND DAM
SCALE: 1" = 5'

PLATE B-2



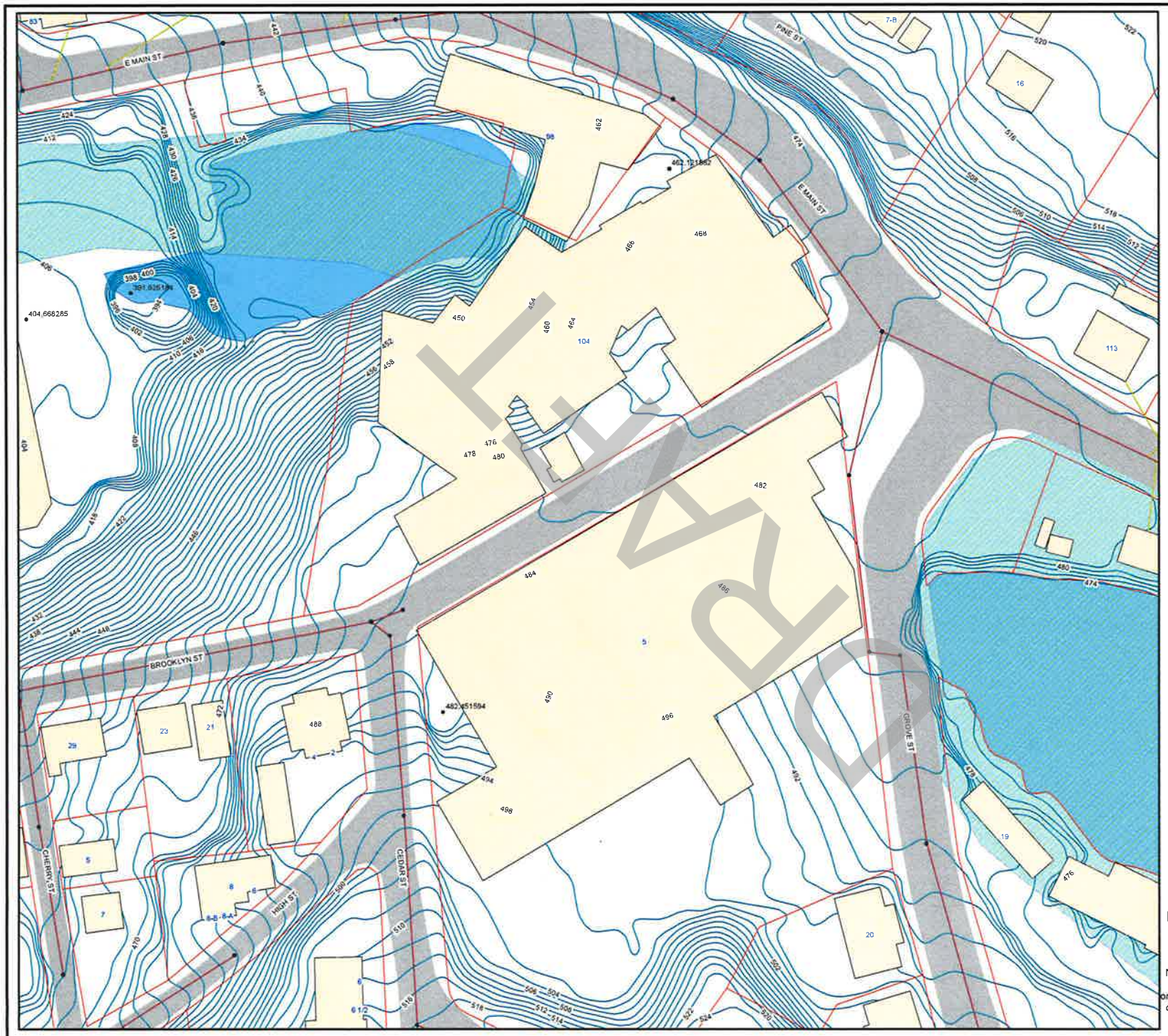
SECTION B-B

PLATE B-3

PAPER MILL POND DAM

SCALE: 1"=10'

ATTACHMENT 3: CONTOUR MAP



Amerbelle Site

Legend

- Manholes
- Pipes
- Laterals
- Forced Main
- Distance Measure
- Wetlands Revision
- Lot Lines
- Buildings
- Spot Elevation
- 2ft Contours
- Bridges
- Pavement
- Vernal Pools
- Driveways
- Re Wetlands
- Water Courses
- Water Bodies
- Streams

1 in = 100 ft

This map was created by Engineering Dept. 11/18/2014

ATTACHMENT 4: HEC-RAS INPUTS AND OUTPUTS

4A: Existing Conditions - Peak Flows

HEC-RAS Plan: New - Plan 1 River: Hockanum River Reach: Reach 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	834	10 - Year	260.00	467.70	475.91	468.37	475.92	0.000003	0.24	1092.59	174.53	0.02
Reach 1	834	50 - Year	780.00	467.70	479.00	469.08	479.00	0.000006	0.49	1647.35	184.99	0.03
Reach 1	834	100 - Year	1150.00	467.70	480.47	469.46	480.48	0.000009	0.62	1927.13	202.91	0.03
Reach 1	834	500 - Year	2200.00	467.70	484.39	470.34	484.40	0.000011	0.85	3132.78	392.32	0.04
Reach 1	719	10 - Year	260.00	467.70	475.90	469.96	475.91	0.000060	0.88	300.32	71.65	0.07
Reach 1	719	50 - Year	780.00	467.70	478.96	471.81	478.99	0.000095	1.56	527.60	77.87	0.10
Reach 1	719	100 - Year	1150.00	467.70	480.42	472.70	480.47	0.000113	1.92	644.35	82.04	0.11
Reach 1	719	500 - Year	2200.00	467.70	484.30	474.65	484.39	0.000116	2.46	1236.98	281.09	0.12
Reach 1	709 Grove Street		Bridge									
Reach 1	656	10 - Year	260.00	469.00	475.88		475.91	0.000032	1.46	178.57	37.20	0.12
Reach 1	656	50 - Year	780.00	469.00	478.87		478.98	0.000069	2.69	289.91	37.20	0.17
Reach 1	656	100 - Year	1150.00	469.00	480.28		480.45	0.000093	3.36	342.29	37.20	0.20
Reach 1	656	500 - Year	2200.00	469.00	483.94		484.25	0.000153	4.51	487.92	47.20	0.25
Reach 1	654	10 - Year	260.00	469.00	475.86	471.68	475.91	0.000045	1.72	150.74	29.10	0.13
Reach 1	654	50 - Year	780.00	469.00	478.81	473.46	478.97	0.000110	3.30	236.44	29.10	0.20
Reach 1	654	100 - Year	1150.00	469.00	480.17	474.33	480.44	0.000155	4.16	276.22	29.10	0.24
Reach 1	654	500 - Year	2200.00	469.00	483.73	476.30	484.24	0.000284	5.68	387.20	39.10	0.32
Reach 1	653 Sluiceway		Bridge									
Reach 1	372	10 - Year	260.00	468.50	475.82		475.89	0.000075	2.16	120.46	19.30	0.15
Reach 1	372	50 - Year	780.00	468.50	478.60		478.92	0.000247	4.48	174.29	19.30	0.26
Reach 1	372	100 - Year	1150.00	468.50	479.79		480.25	0.000454	5.45	211.04	32.00	0.37
Reach 1	372	500 - Year	2200.00	468.50	482.23		483.13	0.000658	7.61	288.99	32.00	0.45
Reach 1	365	10 - Year	260.00	464.00	475.85	466.26	475.87	0.000022	1.37	189.37	17.00	0.07
Reach 1	365	50 - Year	780.00	464.00	478.70	468.61	478.87	0.000167	3.28	238.03	32.00	0.21
Reach 1	365	100 - Year	1150.00	464.00	479.92	469.90	480.19	0.000231	4.15	277.07	32.00	0.25
Reach 1	365	500 - Year	2200.00	464.00	482.44	472.73	483.03	0.000401	6.15	357.64	32.00	0.32
Reach 1	364 Existing Spillwa		Inl Struct									
Reach 1	358	10 - Year	260.00	461.70	463.63	463.63	464.61	0.003503	7.93	32.80	17.00	1.01
Reach 1	358	50 - Year	780.00	461.70	465.72	465.72	467.74	0.003482	11.41	68.33	17.00	1.00
Reach 1	358	100 - Year	1150.00	461.70	466.90	466.90	469.53	0.003613	13.00	88.44	17.00	1.00
Reach 1	358	500 - Year	2200.00	461.70	470.70	470.70	473.36	0.003473	13.10	167.99	32.00	1.01
Reach 1	328	10 - Year	260.00	454.00	454.78	456.20	463.53	0.091616	23.73	10.96	14.00	4.73
Reach 1	328	50 - Year	780.00	454.00	456.14	458.57	466.65	0.035667	26.02	29.98	14.00	3.13
Reach 1	328	100 - Year	1150.00	454.00	457.03	459.92	468.42	0.027494	27.08	42.47	14.00	2.74
Reach 1	328	500 - Year	2200.00	454.00	459.50	463.14	472.16	0.018526	28.55	77.06	14.00	2.14
Reach 1	327 Arch Opening		Bridge									
Reach 1	255	10 - Year	260.00	451.10	451.92	453.30	459.81	0.077752	22.54	11.53	14.00	4.38
Reach 1	255	50 - Year	780.00	451.10	453.12	455.68	464.90	0.042383	27.54	28.32	14.00	3.41
Reach 1	255	100 - Year	1150.00	451.10	453.93	457.02	466.98	0.033602	28.99	39.67	14.00	3.03
Reach 1	255	500 - Year	2200.00	451.10	456.17	460.25	471.08	0.023217	30.98	71.01	14.00	2.42
Reach 1	254	10 - Year	260.00	430.00	430.70	432.34	453.62	0.339832	38.42	6.77	12.27	9.12
Reach 1	254	50 - Year	780.00	430.00	431.45	434.00	460.57	0.194991	43.30	18.01	17.87	7.60
Reach 1	254	100 - Year	1150.00	430.00	431.84	434.82	463.08	0.160664	44.85	25.64	20.82	7.12
Reach 1	254	500 - Year	2200.00	430.00	432.71	436.55	467.61	0.117135	47.41	46.41	27.30	6.41
Reach 1	232	10 - Year	260.00	425.00	428.23	426.29	428.25	0.000063	1.25	207.85	104.46	0.16
Reach 1	232	50 - Year	780.00	425.00	425.64	427.25	453.88	0.484955	42.65	18.29	37.58	10.77
Reach 1	232	100 - Year	1150.00	425.00	425.81	427.72	457.64	0.415519	45.27	25.40	42.49	10.32
Reach 1	232	500 - Year	2200.00	425.00	426.22	428.63	463.42	0.310362	48.94	44.95	53.73	9.43
Reach 1	122	10 - Year	260.00	425.00	428.22		428.23	0.000217	0.97	267.51	139.10	0.12
Reach 1	122	50 - Year	780.00	425.00	429.36	427.04	429.41	0.000419	1.83	428.62	144.78	0.18
Reach 1	122	100 - Year	1150.00	425.00	429.96	427.45	430.04	0.000498	2.26	516.93	147.79	0.21
Reach 1	122	500 - Year	2200.00	425.00	431.31	428.27	431.46	0.000633	3.13	719.78	152.58	0.25
Reach 1	53	10 - Year	260.00	425.00	428.14	426.67	428.20	0.000957	1.98	131.67	72.14	0.26
Reach 1	53	50 - Year	780.00	425.00	429.10	427.80	429.33	0.002121	3.89	204.50	79.81	0.41
Reach 1	53	100 - Year	1150.00	425.00	429.58	428.30	429.94	0.002707	4.87	243.41	83.62	0.47
Reach 1	53	500 - Year	2200.00	425.00	430.55	429.40	431.31	0.004071	7.10	328.25	91.91	0.61
Reach 1	48 Ano-Coil Dam		Inl Struct									
Reach 1	0	10 - Year	260.00	394.00	395.37	395.37	395.95	0.017727	6.08	42.73	37.34	1.00

HEC-RAS Plan: New - Plan 1 River: Hockanum River Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	0	50 - Year	780.00	394.00	396.60	396.60	397.66	0.014879	8.28	94.15	44.79	1.01
Reach 1	0	100 - Year	1150.00	394.00	397.24	397.24	398.58	0.013922	9.30	123.66	46.72	1.01
Reach 1	0	500 - Year	2200.00	394.00	398.72	398.72	400.68	0.012537	11.25	195.60	50.43	1.01

4B: Existing Conditions without Dam – Peak Flows

HEC-RAS Plan: New - Plan2 River: Hockanum River Reach: Reach 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	834	10 - Year	260.00	467.70	473.27	468.37	473.27	0.000013	0.40	652.10	154.24	0.03
Reach 1	834	50 - Year	780.00	467.70	475.79	469.08	475.80	0.000025	0.73	1071.01	173.85	0.05
Reach 1	834	100 - Year	1150.00	467.70	477.43	469.46	477.44	0.000025	0.86	1361.89	180.01	0.05
Reach 1	834	500 - Year	2200.00	467.70	481.44	470.34	481.46	0.000024	1.09	2138.50	233.43	0.06
Reach 1	719	10 - Year	260.00	467.70	473.20	469.96	473.26	0.000463	2.00	130.02	37.97	0.19
Reach 1	719	50 - Year	780.00	467.70	475.66	471.80	475.78	0.000653	2.80	283.02	70.80	0.24
Reach 1	719	100 - Year	1150.00	467.70	477.29	472.70	477.42	0.000478	2.97	401.45	73.93	0.22
Reach 1	719	500 - Year	2200.00	467.70	481.27	474.65	481.44	0.000304	3.33	715.34	84.18	0.19
Reach 1	709 Grove Street		Bridge									
Reach 1	656	10 - Year	260.00	469.00	473.03		473.22	0.000455	3.52	73.81	33.23	0.42
Reach 1	656	50 - Year	780.00	469.00	475.34		475.72	0.000416	4.91	158.82	37.20	0.42
Reach 1	656	100 - Year	1150.00	469.00	476.93		477.36	0.000348	5.28	217.82	37.20	0.38
Reach 1	656	500 - Year	2200.00	469.00	480.80		481.37	0.000290	6.08	361.68	37.20	0.34
Reach 1	654	10 - Year	260.00	469.00	472.99		473.21	0.000486	3.84	67.78	27.39	0.43
Reach 1	654	50 - Year	780.00	469.00	475.14		475.70	0.000631	6.01	129.69	29.10	0.50
Reach 1	654	100 - Year	1150.00	469.00	476.66		477.34	0.000576	6.61	173.97	29.10	0.48
Reach 1	654	500 - Year	2200.00	469.00	480.39		481.33	0.000533	7.78	282.66	29.10	0.44
Reach 1	644	10 - Year	260.00	469.90	472.36	472.36	473.15	0.003134	7.15	36.39	23.49	1.01
Reach 1	644	50 - Year	780.00	469.90	474.74		475.65	0.001392	7.67	101.67	29.10	0.72
Reach 1	644	100 - Year	1150.00	469.90	476.39		477.31	0.000942	7.68	149.74	29.10	0.60
Reach 1	644	500 - Year	2200.00	469.90	480.21		481.31	0.000695	8.44	260.81	29.10	0.50
Reach 1	604	10 - Year	260.00	469.60	471.09	471.63	472.84	0.011212	10.60	24.52	23.83	1.84
Reach 1	604	50 - Year	780.00	469.60	474.98		475.50	0.000579	5.76	135.52	29.10	0.47
Reach 1	604	100 - Year	1150.00	469.60	476.57		477.19	0.000531	6.33	181.58	29.10	0.45
Reach 1	604	500 - Year	2200.00	469.60	480.34		481.22	0.000508	7.55	291.30	29.10	0.42
Reach 1	584.181*	10 - Year	260.00	469.50	472.23	471.58	472.57	0.000943	4.63	56.20	28.21	0.58
Reach 1	584.181*	50 - Year	780.00	469.50	474.95		475.48	0.000604	5.87	132.77	28.21	0.48
Reach 1	584.181*	100 - Year	1150.00	469.50	476.52		477.17	0.000562	6.49	177.13	28.21	0.46
Reach 1	584.181*	500 - Year	2200.00	469.50	480.27		481.21	0.000548	7.78	282.82	28.21	0.43
Reach 1	564.363*	10 - Year	260.00	469.40	472.21		472.55	0.000922	4.64	56.06	27.32	0.57
Reach 1	564.363*	50 - Year	780.00	469.40	474.91		475.47	0.000635	6.02	129.66	27.32	0.49
Reach 1	564.363*	100 - Year	1150.00	469.40	476.47		477.16	0.000600	6.67	172.31	27.32	0.47
Reach 1	564.363*	500 - Year	2200.00	469.40	480.19		481.19	0.000596	8.03	273.87	27.32	0.45
Reach 1	544.545*	10 - Year	260.00	469.30	472.19		472.53	0.000918	4.68	55.61	26.43	0.57
Reach 1	544.545*	50 - Year	780.00	469.30	474.86		475.45	0.000676	6.18	126.21	26.43	0.50
Reach 1	544.545*	100 - Year	1150.00	469.30	476.41		477.14	0.000647	6.88	167.12	26.43	0.48
Reach 1	544.545*	500 - Year	2200.00	469.30	480.09		481.17	0.000653	8.32	264.50	26.43	0.46
Reach 1	524.727*	10 - Year	260.00	469.20	472.16		472.51	0.000920	4.72	55.03	25.54	0.57
Reach 1	524.727*	50 - Year	780.00	469.20	474.81		475.44	0.000723	6.36	122.56	25.54	0.51
Reach 1	524.727*	100 - Year	1150.00	469.20	476.34		477.12	0.000702	7.11	161.71	25.54	0.50
Reach 1	524.727*	500 - Year	2200.00	469.20	479.99		481.15	0.000720	8.63	254.92	25.54	0.48
Reach 1	504.909*	10 - Year	260.00	469.10	472.13	471.43	472.49	0.000939	4.80	54.15	24.65	0.57
Reach 1	504.909*	50 - Year	780.00	469.10	474.74	473.08	475.42	0.000784	6.58	118.56	24.65	0.53
Reach 1	504.909*	100 - Year	1150.00	469.10	476.26	474.01	477.10	0.000771	7.38	155.84	24.65	0.52
Reach 1	504.909*	500 - Year	2200.00	469.10	479.87	476.21	481.12	0.000801	8.98	244.91	24.65	0.50
Reach 1	490 Brooklyn Street		Bridge									
Reach 1	445.454*	10 - Year	260.00	468.80	471.99		472.42	0.001138	5.26	49.44	21.97	0.62
Reach 1	445.454*	50 - Year	780.00	468.80	474.47		475.34	0.001100	7.51	103.80	21.97	0.61
Reach 1	445.454*	100 - Year	1150.00	468.80	475.90		477.02	0.001116	8.50	135.31	21.97	0.60
Reach 1	445.454*	500 - Year	2200.00	468.80	479.29		481.00	0.001214	10.48	209.88	21.97	0.60
Reach 1	425.636*	10 - Year	260.00	468.70	471.91		472.39	0.001303	5.55	46.88	21.08	0.66
Reach 1	425.636*	50 - Year	780.00	468.70	474.31		475.31	0.001297	8.00	97.54	21.08	0.66
Reach 1	425.636*	100 - Year	1150.00	468.70	475.71		476.98	0.001326	9.06	126.89	21.08	0.65
Reach 1	425.636*	500 - Year	2200.00	468.70	479.00		480.95	0.001456	11.21	196.28	21.08	0.65
Reach 1	405.818*	10 - Year	260.00	468.60	471.81		472.36	0.001558	5.93	43.82	20.19	0.71
Reach 1	405.818*	50 - Year	780.00	468.60	474.09		475.26	0.001618	8.67	89.94	20.19	0.72
Reach 1	405.818*	100 - Year	1150.00	468.60	475.42		476.93	0.001661	9.85	116.81	20.19	0.72
Reach 1	405.818*	500 - Year	2200.00	468.60	478.56		480.88	0.001837	12.21	180.20	20.19	0.72
Reach 1	386	10 - Year	260.00	468.50	471.59	471.36	472.30	0.002273	6.77	38.42	19.30	0.85
Reach 1	386	50 - Year	780.00	468.50	473.60	473.28	475.18	0.002478	10.09	77.32	19.30	0.89

HEC-RAS Plan: New - Plan2 River: Hockanum River Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	386	100 - Year	1150.00	468.50	474.82	474.38	476.84	0.002500	11.40	100.84	19.30	0.88
Reach 1	386	500 - Year	2200.00	468.50	477.60	476.96	480.75	0.002795	14.25	154.43	19.30	0.89
Reach 1	372	10 - Year	260.00	468.50	471.34	471.34	472.24	0.003174	7.64	34.04	19.30	1.01
Reach 1	372	50 - Year	780.00	468.50	473.27	473.27	475.13	0.003023	10.92	71.41	19.30	1.00
Reach 1	372	100 - Year	1150.00	468.50	474.35	474.35	476.77	0.003132	12.48	92.15	19.30	1.01
Reach 1	372	500 - Year	2200.00	468.50	476.95	476.95	480.66	0.003395	15.45	142.35	19.30	1.00
Reach 1	365	10 - Year	260.00	464.00	464.94	466.26	471.60	0.055357	20.71	12.55	13.63	3.80
Reach 1	365	50 - Year	780.00	464.00	466.49	468.61	474.47	0.022471	22.67	34.41	14.66	2.61
Reach 1	365	100 - Year	1150.00	464.00	467.44	469.90	476.10	0.017631	23.61	48.71	15.30	2.33
Reach 1	365	500 - Year	2200.00	464.00	469.75	472.74	479.97	0.013061	25.66	85.72	16.83	2.00
Reach 1	358	10 - Year	260.00	461.70	462.35	463.63	470.89	0.109246	23.44	11.09	17.00	5.12
Reach 1	358	50 - Year	780.00	461.70	463.46	465.72	474.00	0.041771	26.05	29.95	17.00	3.46
Reach 1	358	100 - Year	1150.00	461.70	464.19	466.90	475.65	0.031372	27.16	42.34	17.00	3.03
Reach 1	358	500 - Year	2200.00	461.70	466.10	470.71	479.54	0.021344	29.42	74.78	17.00	2.47
Reach 1	328	10 - Year	260.00	454.00	454.67	456.20	466.69	0.152741	27.83	9.34	14.00	6.00
Reach 1	328	50 - Year	780.00	454.00	455.73	458.57	471.86	0.068467	32.23	24.20	14.00	4.32
Reach 1	328	100 - Year	1150.00	454.00	456.45	459.92	473.86	0.051549	33.48	34.34	14.00	3.77
Reach 1	328	500 - Year	2200.00	454.00	458.41	463.14	478.11	0.034286	35.62	61.76	14.00	2.99
Reach 1	327 Arch Opening		Bridge									
Reach 1	255	10 - Year	260.00	451.10	451.87	453.30	460.87	0.096025	24.08	10.80	14.00	4.83
Reach 1	255	50 - Year	780.00	451.10	452.83	455.68	468.96	0.068478	32.23	24.20	14.00	4.32
Reach 1	255	100 - Year	1150.00	451.10	453.51	457.02	471.59	0.054537	34.12	33.70	14.00	3.88
Reach 1	255	500 - Year	2200.00	451.10	455.36	460.25	476.47	0.037788	36.87	59.67	14.00	3.15
Reach 1	254	10 - Year	260.00	430.00	430.70	432.34	454.00	0.348114	38.74	6.71	12.23	9.22
Reach 1	254	50 - Year	780.00	430.00	431.40	434.00	463.60	0.224102	45.54	17.13	17.49	8.11
Reach 1	254	100 - Year	1150.00	430.00	431.77	434.82	466.84	0.188220	47.52	24.20	20.30	7.67
Reach 1	254	500 - Year	2200.00	430.00	432.60	436.55	472.43	0.140127	50.65	43.43	26.47	6.97
Reach 1	232	10 - Year	260.00	425.00	428.23	426.29	428.25	0.000063	1.25	207.85	104.46	0.16
Reach 1	232	50 - Year	780.00	425.00	425.62	427.25	455.73	0.531466	44.04	17.71	37.15	11.24
Reach 1	232	100 - Year	1150.00	425.00	425.79	427.72	460.53	0.470029	47.30	24.31	41.78	10.93
Reach 1	232	500 - Year	2200.00	425.00	426.17	428.63	467.60	0.360081	51.65	42.59	52.51	10.11
Reach 1	122	10 - Year	260.00	425.00	428.22		428.23	0.000217	0.97	267.51	139.10	0.12
Reach 1	122	50 - Year	780.00	425.00	429.36	427.04	429.41	0.000419	1.83	428.62	144.78	0.18
Reach 1	122	100 - Year	1150.00	425.00	429.96	427.45	430.04	0.000498	2.26	516.93	147.79	0.21
Reach 1	122	500 - Year	2200.00	425.00	431.31	428.27	431.46	0.000633	3.13	719.79	152.58	0.25
Reach 1	53	10 - Year	260.00	425.00	428.14	426.67	428.20	0.000957	1.98	131.67	72.14	0.26
Reach 1	53	50 - Year	780.00	425.00	429.10	427.80	429.33	0.002121	3.89	204.50	79.81	0.41
Reach 1	53	100 - Year	1150.00	425.00	429.58	428.30	429.94	0.002707	4.87	243.41	83.62	0.47
Reach 1	53	500 - Year	2200.00	425.00	430.55	429.40	431.31	0.004071	7.10	328.25	91.91	0.61
Reach 1	48 Ano-Coil Dam		Inl Struct									
Reach 1	0	10 - Year	260.00	394.00	395.37	395.37	395.95	0.017727	6.08	42.73	37.34	1.00
Reach 1	0	50 - Year	780.00	394.00	396.60	396.60	397.66	0.014879	8.28	94.15	44.79	1.01
Reach 1	0	100 - Year	1150.00	394.00	397.24	397.24	398.58	0.013922	9.30	123.66	46.72	1.01
Reach 1	0	500 - Year	2200.00	394.00	398.72	398.72	400.68	0.012537	11.25	195.60	50.43	1.01

4C: Existing Conditions without Dam - Baseflows

HEC-RAS Plan: New - Plan3 River: Hockanum River Reach: Reach 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	834	PF 1	6.00	467.70	470.59	467.76	470.59	0.000000	0.02	286.58	118.50	0.00
Reach 1	834	PF 2	13.00	467.70	470.84	467.79	470.84	0.000000	0.04	316.75	121.85	0.00
Reach 1	834	PF 3	17.00	467.70	470.95	467.81	470.95	0.000000	0.05	329.89	123.28	0.01
Reach 1	834	PF 4	24.00	467.70	471.10	467.84	471.10	0.000001	0.07	349.27	125.36	0.01
Reach 1	834	PF 5	31.00	467.70	471.23	467.87	471.23	0.000001	0.08	365.76	127.10	0.01
Reach 1	834	PF 6	46.00	467.70	471.46	467.92	471.46	0.000002	0.12	395.35	130.16	0.01
Reach 1	719	PF 1	6.00	467.70	470.59	467.92	470.59	0.000003	0.12	49.56	24.33	0.01
Reach 1	719	PF 2	13.00	467.70	470.84	468.06	470.84	0.000011	0.23	55.80	25.57	0.03
Reach 1	719	PF 3	17.00	467.70	470.94	468.13	470.95	0.000017	0.29	58.56	26.10	0.03
Reach 1	719	PF 4	24.00	467.70	471.10	468.24	471.10	0.000028	0.38	62.66	26.87	0.04
Reach 1	719	PF 5	31.00	467.70	471.23	468.33	471.23	0.000040	0.47	66.17	27.51	0.05
Reach 1	719	PF 6	46.00	467.70	471.46	468.51	471.46	0.000069	0.63	72.54	28.64	0.07
Reach 1	709 Grove Street		Bridge									
Reach 1	656	PF 1	6.00	469.00	470.58		470.59	0.000021	0.42	14.19	15.60	0.08
Reach 1	656	PF 2	13.00	469.00	470.83		470.84	0.000050	0.71	18.22	17.36	0.12
Reach 1	656	PF 3	17.00	469.00	470.93		470.94	0.000066	0.85	20.05	18.11	0.14
Reach 1	656	PF 4	24.00	469.00	471.08		471.10	0.000093	1.05	22.82	19.18	0.17
Reach 1	656	PF 5	31.00	469.00	471.20		471.23	0.000118	1.23	25.22	20.07	0.19
Reach 1	656	PF 6	46.00	469.00	471.41		471.45	0.000167	1.55	29.64	21.60	0.23
Reach 1	654	PF 1	6.00	469.00	470.58		470.59	0.000017	0.40	15.10	15.38	0.07
Reach 1	654	PF 2	13.00	469.00	470.83		470.84	0.000042	0.68	19.02	16.74	0.11
Reach 1	654	PF 3	17.00	469.00	470.93		470.94	0.000056	0.82	20.78	17.31	0.13
Reach 1	654	PF 4	24.00	469.00	471.08		471.10	0.000080	1.03	23.41	18.14	0.16
Reach 1	654	PF 5	31.00	469.00	471.20		471.23	0.000103	1.21	25.67	18.82	0.18
Reach 1	654	PF 6	46.00	469.00	471.41		471.45	0.000151	1.54	29.78	19.99	0.22
Reach 1	644	PF 1	6.00	469.90	470.44	470.44	470.57	0.005102	2.93	2.05	7.59	1.00
Reach 1	644	PF 2	13.00	469.90	470.63	470.63	470.82	0.004733	3.46	3.76	10.28	1.01
Reach 1	644	PF 3	17.00	469.90	470.71	470.71	470.92	0.004625	3.67	4.63	11.42	1.01
Reach 1	644	PF 4	24.00	469.90	470.83	470.83	471.07	0.004415	3.93	6.11	13.11	1.01
Reach 1	644	PF 5	31.00	469.90	470.93	470.93	471.20	0.004262	4.13	7.50	14.52	1.01
Reach 1	644	PF 6	46.00	469.90	471.11	471.11	471.42	0.004041	4.47	10.28	17.01	1.01
Reach 1	604	PF 1	6.00	469.60	469.73	469.83	470.10	0.041764	4.90	1.22	10.26	2.50
Reach 1	604	PF 2	13.00	469.60	469.81	469.97	470.38	0.032902	6.01	2.16	11.13	2.40
Reach 1	604	PF 3	17.00	469.60	469.86	470.04	470.49	0.029556	6.38	2.66	11.57	2.34
Reach 1	604	PF 4	24.00	469.60	469.93	470.14	470.66	0.025904	6.88	3.49	12.26	2.27
Reach 1	604	PF 5	31.00	469.60	469.99	470.23	470.81	0.023391	7.24	4.28	12.88	2.21
Reach 1	604	PF 6	46.00	469.60	470.11	470.40	471.04	0.019469	7.73	5.95	14.11	2.10
Reach 1	584.181*	PF 1	6.00	469.50	469.68	469.74	469.90	0.016939	3.80	1.58	9.81	1.67
Reach 1	584.181*	PF 2	13.00	469.50	469.95	469.89	470.07	0.002954	2.79	4.66	12.40	0.80
Reach 1	584.181*	PF 3	17.00	469.50	470.06	469.96	470.18	0.002385	2.82	6.03	13.45	0.74
Reach 1	584.181*	PF 4	24.00	469.50	470.24	470.07	470.36	0.001732	2.79	8.59	15.23	0.66
Reach 1	584.181*	PF 5	31.00	469.50	470.39	470.17	470.51	0.001453	2.82	10.99	16.82	0.62
Reach 1	584.181*	PF 6	46.00	469.50	470.59	470.34	470.74	0.001457	3.15	14.60	18.97	0.63
Reach 1	564.363*	PF 1	6.00	469.40	469.58	469.66	469.85	0.020476	4.18	1.44	8.93	1.84
Reach 1	564.363*	PF 2	13.00	469.40	469.91		470.02	0.002360	2.65	4.91	11.91	0.73
Reach 1	564.363*	PF 3	17.00	469.40	470.03		470.14	0.001922	2.67	6.36	13.03	0.67
Reach 1	564.363*	PF 4	24.00	469.40	470.21		470.32	0.001454	2.68	8.97	14.88	0.61
Reach 1	564.363*	PF 5	31.00	469.40	470.37		470.48	0.001276	2.73	11.38	16.63	0.58
Reach 1	564.363*	PF 6	46.00	469.40	470.57		470.71	0.001350	3.08	14.93	18.93	0.61
Reach 1	544.545*	PF 1	6.00	469.30	469.50	469.58	469.76	0.017464	4.12	1.46	8.22	1.72
Reach 1	544.545*	PF 2	13.00	469.30	469.88		469.97	0.001879	2.51	5.18	11.45	0.66
Reach 1	544.545*	PF 3	17.00	469.30	470.00		470.10	0.001593	2.56	6.65	12.62	0.62
Reach 1	544.545*	PF 4	24.00	469.30	470.19		470.30	0.001271	2.59	9.27	14.56	0.57
Reach 1	544.545*	PF 5	31.00	469.30	470.35		470.46	0.001163	2.66	11.66	16.48	0.56
Reach 1	544.545*	PF 6	46.00	469.30	470.54		470.69	0.001289	3.04	15.15	18.93	0.60
Reach 1	524.727*	PF 1	6.00	469.20	469.42	469.50	469.68	0.015779	4.13	1.45	7.53	1.66
Reach 1	524.727*	PF 2	13.00	469.20	469.85		469.94	0.001514	2.38	5.47	11.13	0.60
Reach 1	524.727*	PF 3	17.00	469.20	469.98		470.07	0.001343	2.45	6.93	12.30	0.58
Reach 1	524.727*	PF 4	24.00	469.20	470.17		470.27	0.001133	2.52	9.54	14.32	0.54
Reach 1	524.727*	PF 5	31.00	469.20	470.33		470.43	0.001080	2.60	11.93	16.46	0.54
Reach 1	524.727*	PF 6	46.00	469.20	470.52		470.66	0.001248	2.99	15.36	19.13	0.59
Reach 1	504.909*	PF 1	6.00	469.10	469.55	469.43	469.61	0.001623	1.99	3.02	8.49	0.59
Reach 1	504.909*	PF 2	13.00	469.10	469.83	469.62	469.91	0.001288	2.29	5.67	10.77	0.56
Reach 1	504.909*	PF 3	17.00	469.10	469.95	469.71	470.04	0.001195	2.39	7.11	11.97	0.55
Reach 1	504.909*	PF 4	24.00	469.10	470.15	469.84	470.25	0.001067	2.48	9.69	14.22	0.53

HEC-RAS Plan: New - Plan3 River: Hockanum River Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	504.909*	PF 5	31.00	469.10	470.31	469.95	470.41	0.001045	2.56	12.09	16.61	0.53
Reach 1	504.909*	PF 6	46.00	469.10	470.50	470.16	470.63	0.001236	2.97	15.51	19.42	0.58
Reach 1	490 Brooklyn Street		Bridge									
Reach 1	445.454*	PF 1	6.00	468.80	469.44		469.50	0.001193	1.92	3.12	7.22	0.52
Reach 1	445.454*	PF 2	13.00	468.80	469.75		469.83	0.001132	2.30	5.66	9.66	0.53
Reach 1	445.454*	PF 3	17.00	468.80	469.88		469.97	0.001121	2.43	6.98	10.83	0.53
Reach 1	445.454*	PF 4	24.00	468.80	470.08		470.18	0.001142	2.56	9.39	13.74	0.55
Reach 1	445.454*	PF 5	31.00	468.80	470.24		470.34	0.001206	2.62	11.84	17.49	0.56
Reach 1	445.454*	PF 6	46.00	468.80	470.41		470.55	0.001401	3.01	15.26	20.37	0.61
Reach 1	425.636*	PF 1	6.00	468.70	469.42		469.48	0.001229	1.98	3.03	6.81	0.52
Reach 1	425.636*	PF 2	13.00	468.70	469.72		469.80	0.001252	2.41	5.40	9.22	0.55
Reach 1	425.636*	PF 3	17.00	468.70	469.84		469.94	0.001245	2.56	6.65	10.33	0.56
Reach 1	425.636*	PF 4	24.00	468.70	470.04		470.15	0.001339	2.69	8.93	13.62	0.59
Reach 1	425.636*	PF 5	31.00	468.70	470.20		470.31	0.001427	2.70	11.49	18.35	0.60
Reach 1	425.636*	PF 6	46.00	468.70	470.37		470.52	0.001491	3.10	14.84	19.79	0.63
Reach 1	405.818*	PF 1	6.00	468.60	469.38		469.45	0.001473	2.15	2.79	6.37	0.57
Reach 1	405.818*	PF 2	13.00	468.60	469.67		469.78	0.001521	2.61	4.98	8.66	0.61
Reach 1	405.818*	PF 3	17.00	468.60	469.80		469.92	0.001492	2.78	6.12	9.55	0.61
Reach 1	405.818*	PF 4	24.00	468.60	469.99		470.12	0.001718	2.95	8.12	12.92	0.66
Reach 1	405.818*	PF 5	31.00	468.60	470.16		470.28	0.001735	2.83	10.95	18.81	0.65
Reach 1	405.818*	PF 6	46.00	468.60	470.33		470.49	0.001694	3.25	14.14	19.15	0.67
Reach 1	386	PF 1	6.00	468.50	469.21	469.21	469.39	0.004876	3.38	1.77	4.98	1.00
Reach 1	386	PF 2	13.00	468.50	469.47	469.47	469.71	0.004480	3.98	3.27	6.77	1.01
Reach 1	386	PF 3	17.00	468.50	469.57	469.57	469.85	0.004388	4.22	4.03	7.50	1.01
Reach 1	386	PF 4	24.00	468.50	469.73	469.73	470.05	0.004236	4.54	5.29	8.59	1.02
Reach 1	386	PF 5	31.00	468.50	469.98	469.98	470.22	0.004285	3.93	7.89	16.28	0.99
Reach 1	386	PF 6	46.00	468.50	470.13	470.13	470.42	0.004247	4.38	10.50	18.20	1.02
Reach 1	372	PF 1	6.00	468.50	469.09	469.14	469.31	0.007461	3.73	1.61	5.41	1.20
Reach 1	372	PF 2	13.00	468.50	469.28	469.37	469.62	0.008061	4.66	2.79	7.13	1.31
Reach 1	372	PF 3	17.00	468.50	469.37	469.47	469.75	0.007883	4.94	3.44	7.91	1.32
Reach 1	372	PF 4	24.00	468.50	469.47	469.61	469.96	0.008706	5.59	4.30	8.84	1.41
Reach 1	372	PF 5	31.00	468.50	469.58	469.73	470.11	0.008465	5.89	5.26	9.78	1.42
Reach 1	372	PF 6	46.00	468.50	469.83	469.94	470.34	0.006061	5.74	8.02	12.08	1.24
Reach 1	365	PF 1	6.00	464.00	464.03	464.19	468.67	3.842196	17.29	0.35	13.02	18.67
Reach 1	365	PF 2	13.00	464.00	464.06	464.31	468.97	1.514022	17.78	0.73	13.04	13.23
Reach 1	365	PF 3	17.00	464.00	464.07	464.37	469.09	1.100357	17.97	0.95	13.05	11.76
Reach 1	365	PF 4	24.00	464.00	464.10	464.47	469.29	0.738961	18.27	1.31	13.07	10.16
Reach 1	365	PF 5	31.00	464.00	464.13	464.56	469.45	0.551382	18.51	1.67	13.09	9.12
Reach 1	365	PF 6	46.00	464.00	464.19	464.72	469.71	0.350706	18.85	2.44	13.12	7.71
Reach 1	358	PF 1	6.00	461.70	461.75	461.86	462.54	0.287859	7.13	0.84	17.00	5.65
Reach 1	358	PF 2	13.00	461.70	461.77	461.96	463.45	0.359161	10.38	1.25	17.00	6.74
Reach 1	358	PF 3	17.00	461.70	461.78	462.01	463.95	0.388552	11.82	1.44	17.00	7.16
Reach 1	358	PF 4	24.00	461.70	461.80	462.09	464.80	0.422166	13.90	1.73	17.00	7.69
Reach 1	358	PF 5	31.00	461.70	461.82	462.17	465.56	0.434816	15.52	2.00	17.00	7.98
Reach 1	358	PF 6	46.00	461.70	461.85	462.31	466.87	0.421677	17.99	2.56	17.00	8.17
Reach 1	328	PF 1	6.00	454.00	454.06	454.18	454.86	0.229287	7.19	0.83	14.00	5.19
Reach 1	328	PF 2	13.00	454.00	454.10	454.30	455.47	0.200686	9.40	1.38	14.00	5.27
Reach 1	328	PF 3	17.00	454.00	454.12	454.36	455.79	0.195232	10.36	1.64	14.00	5.34
Reach 1	328	PF 4	24.00	454.00	454.14	454.45	456.32	0.192614	11.83	2.03	14.00	5.48
Reach 1	328	PF 5	31.00	454.00	454.17	454.53	456.85	0.194994	13.14	2.36	14.00	5.64
Reach 1	328	PF 6	46.00	454.00	454.21	454.69	457.97	0.204279	15.56	2.96	14.00	5.97
Reach 1	327 Arch Opening		Bridge									
Reach 1	255	PF 1	6.00	451.10	451.15	451.28	452.32	0.430420	8.70	0.69	14.00	6.90
Reach 1	255	PF 2	13.00	451.10	451.19	451.40	453.00	0.318494	10.80	1.20	14.00	6.49
Reach 1	255	PF 3	17.00	451.10	451.21	451.46	453.23	0.269751	11.43	1.49	14.00	6.18
Reach 1	255	PF 4	24.00	451.10	451.24	451.55	453.53	0.210378	12.15	1.98	14.00	5.70
Reach 1	255	PF 5	31.00	451.10	451.28	451.63	453.76	0.172292	12.65	2.45	14.00	5.33
Reach 1	255	PF 6	46.00	451.10	451.35	451.79	454.12	0.123850	13.37	3.44	14.00	4.75
Reach 1	254	PF 1	6.00	430.00	430.06	430.27	432.95	0.829767	13.65	0.44	7.46	9.91
Reach 1	254	PF 2	13.00	430.00	430.09	430.44	435.76	0.948199	19.10	0.68	7.69	11.32
Reach 1	254	PF 3	17.00	430.00	430.11	430.51	437.28	1.001141	21.49	0.79	7.80	11.90
Reach 1	254	PF 4	24.00	430.00	430.13	430.63	439.62	1.037841	24.72	0.97	7.97	12.48
Reach 1	254	PF 5	31.00	430.00	430.15	430.73	441.47	1.017841	26.99	1.15	8.14	12.66
Reach 1	254	PF 6	46.00	430.00	430.20	430.93	444.25	0.914161	30.09	1.53	8.48	12.49

HEC-RAS Plan: New - Plan3 River: Hockanum River Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	232	PF 1	6.00	425.00	427.11	425.14	427.11	0.000000	0.06	103.97	78.44	0.01
Reach 1	232	PF 2	13.00	425.00	427.18	425.22	427.18	0.000001	0.12	109.67	80.43	0.02
Reach 1	232	PF 3	17.00	425.00	427.21	425.26	427.22	0.000002	0.15	112.15	81.27	0.02
Reach 1	232	PF 4	24.00	425.00	427.27	425.33	427.27	0.000003	0.21	116.63	82.79	0.03
Reach 1	232	PF 5	31.00	425.00	427.32	425.38	427.32	0.000004	0.26	120.63	84.11	0.04
Reach 1	232	PF 6	46.00	425.00	427.41	425.49	427.41	0.000008	0.36	128.51	86.66	0.05
Reach 1	122	PF 1	6.00	425.00	427.11		427.11	0.000001	0.05	130.00	103.09	0.01
Reach 1	122	PF 2	13.00	425.00	427.18		427.18	0.000004	0.09	137.49	105.90	0.01
Reach 1	122	PF 3	17.00	425.00	427.21		427.21	0.000006	0.12	140.74	107.11	0.02
Reach 1	122	PF 4	24.00	425.00	427.27		427.27	0.000010	0.16	146.64	109.25	0.02
Reach 1	122	PF 5	31.00	425.00	427.32		427.32	0.000015	0.20	151.90	111.13	0.03
Reach 1	122	PF 6	46.00	425.00	427.41		427.41	0.000028	0.28	162.27	114.74	0.04
Reach 1	53	PF 1	6.00	425.00	427.11	425.21	427.11	0.000003	0.09	66.48	52.95	0.01
Reach 1	53	PF 2	13.00	425.00	427.18	425.33	427.18	0.000014	0.18	70.29	54.39	0.03
Reach 1	53	PF 3	17.00	425.00	427.21	425.39	427.21	0.000022	0.24	71.93	55.00	0.04
Reach 1	53	PF 4	24.00	425.00	427.27	425.47	427.27	0.000039	0.32	74.89	56.09	0.05
Reach 1	53	PF 5	31.00	425.00	427.31	425.55	427.32	0.000059	0.40	77.52	57.03	0.06
Reach 1	53	PF 6	46.00	425.00	427.40	425.68	427.41	0.000110	0.56	82.63	58.83	0.08
Reach 1	48 Ano-Coil Dam		Inl Struct									
Reach 1	0	PF 1	6.00	394.00	394.12	394.12	394.18	0.037006	1.96	3.07	26.08	1.01
Reach 1	0	PF 2	13.00	394.00	394.20	394.20	394.30	0.030979	2.50	5.21	26.81	1.00
Reach 1	0	PF 3	17.00	394.00	394.24	394.24	394.35	0.029276	2.72	6.25	27.16	1.00
Reach 1	0	PF 4	24.00	394.00	394.30	394.30	394.44	0.028500	3.07	7.82	27.67	1.02
Reach 1	0	PF 5	31.00	394.00	394.35	394.35	394.52	0.026134	3.29	9.43	28.19	1.00
Reach 1	0	PF 6	46.00	394.00	394.46	394.46	394.67	0.024327	3.72	12.38	29.12	1.00

4D: Proposed Conditions without Dam – Peak Flows

HEC-RAS Plan: New - Plan4 River: Hockanum River Reach: Reach 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	834	10 - Year	260.00	467.70	475.70	468.37	475.70	0.000003	0.25	1055.81	173.36	0.02
Reach 1	834	50 - Year	780.00	467.70	478.62	469.08	478.63	0.000007	0.51	1578.78	183.87	0.03
Reach 1	834	100 - Year	1150.00	467.70	480.07	469.46	480.07	0.000010	0.65	1847.43	190.14	0.03
Reach 1	834	500 - Year	2200.00	467.70	483.73	470.34	483.74	0.000013	0.90	2875.14	378.46	0.04
Reach 1	719	10 - Year	260.00	467.70	475.69	469.96	475.70	0.000071	0.93	285.15	70.91	0.08
Reach 1	719	50 - Year	780.00	467.70	478.58	471.80	478.62	0.000113	1.64	498.50	76.74	0.11
Reach 1	719	100 - Year	1150.00	467.70	480.00	472.72	480.07	0.000133	2.01	610.78	81.01	0.12
Reach 1	719	500 - Year	2200.00	467.70	483.62	474.65	483.73	0.000145	2.66	1057.74	237.73	0.13
Reach 1	709 Grove Street		Bridge									
Reach 1	656	10 - Year	260.00	469.00	475.66		475.70	0.000037	1.52	170.56	37.20	0.13
Reach 1	656	50 - Year	780.00	469.00	478.48		478.61	0.000080	2.83	275.55	37.20	0.18
Reach 1	656	100 - Year	1150.00	469.00	479.85		480.04	0.000106	3.52	326.45	37.20	0.21
Reach 1	656	500 - Year	2200.00	469.00	483.23		483.59	0.000155	4.87	452.02	37.20	0.25
Reach 1	654	10 - Year	260.00	469.00	475.64		475.69	0.000051	1.80	144.44	29.10	0.14
Reach 1	654	50 - Year	780.00	469.00	478.41		478.60	0.000127	3.47	225.03	29.10	0.22
Reach 1	654	100 - Year	1150.00	469.00	479.74		480.03	0.000177	4.36	263.54	29.10	0.26
Reach 1	654	500 - Year	2200.00	469.00	482.99		483.57	0.000280	6.14	358.07	29.10	0.31
Reach 1	644	10 - Year	260.00	469.90	475.63	472.35	475.69	0.000071	1.97	131.73	29.10	0.16
Reach 1	644	50 - Year	780.00	469.90	478.39	473.92	478.60	0.000159	3.68	211.86	29.10	0.24
Reach 1	644	100 - Year	1150.00	469.90	479.70	474.75	480.03	0.000216	4.60	250.07	29.10	0.28
Reach 1	644	500 - Year	2200.00	469.90	482.93	476.72	483.56	0.000327	6.39	344.05	29.10	0.33
Reach 1	630 Proposed Spillwa		Inl Struct									
Reach 1	604	10 - Year	260.00	469.60	472.25		472.59	0.000983	4.64	56.01	29.10	0.59
Reach 1	604	50 - Year	780.00	469.60	474.98		475.50	0.000579	5.76	135.52	29.10	0.47
Reach 1	604	100 - Year	1150.00	469.60	476.57		477.19	0.000531	6.33	181.58	29.10	0.45
Reach 1	604	500 - Year	2200.00	469.60	480.34		481.22	0.000508	7.55	291.30	29.10	0.42
Reach 1	584.181*	10 - Year	260.00	469.50	472.23		472.57	0.000943	4.63	56.20	28.21	0.58
Reach 1	584.181*	50 - Year	780.00	469.50	474.95		475.48	0.000604	5.87	132.77	28.21	0.48
Reach 1	584.181*	100 - Year	1150.00	469.50	476.52		477.17	0.000562	6.49	177.13	28.21	0.46
Reach 1	584.181*	500 - Year	2200.00	469.50	480.27		481.21	0.000548	7.78	282.82	28.21	0.43
Reach 1	564.363*	10 - Year	260.00	469.40	472.21		472.55	0.000922	4.64	56.06	27.32	0.57
Reach 1	564.363*	50 - Year	780.00	469.40	474.91		475.47	0.000635	6.02	129.66	27.32	0.49
Reach 1	564.363*	100 - Year	1150.00	469.40	476.47		477.16	0.000600	6.67	172.31	27.32	0.47
Reach 1	564.363*	500 - Year	2200.00	469.40	480.19		481.19	0.000596	8.03	273.87	27.32	0.45
Reach 1	544.545*	10 - Year	260.00	469.30	472.19		472.53	0.000918	4.68	55.61	26.43	0.57
Reach 1	544.545*	50 - Year	780.00	469.30	474.86		475.45	0.000676	6.18	126.21	26.43	0.50
Reach 1	544.545*	100 - Year	1150.00	469.30	476.41		477.14	0.000647	6.88	167.12	26.43	0.48
Reach 1	544.545*	500 - Year	2200.00	469.30	480.09		481.17	0.000653	8.32	264.50	26.43	0.46
Reach 1	524.727*	10 - Year	260.00	469.20	472.16		472.51	0.000920	4.72	55.03	25.54	0.57
Reach 1	524.727*	50 - Year	780.00	469.20	474.81		475.44	0.000723	6.36	122.56	25.54	0.51
Reach 1	524.727*	100 - Year	1150.00	469.20	476.34		477.12	0.000702	7.11	161.71	25.54	0.50
Reach 1	524.727*	500 - Year	2200.00	469.20	479.99		481.15	0.000720	8.63	254.92	25.54	0.48
Reach 1	504.909*	10 - Year	260.00	469.10	472.13	471.43	472.49	0.000939	4.80	54.15	24.65	0.57
Reach 1	504.909*	50 - Year	780.00	469.10	474.74	473.08	475.42	0.000784	6.58	118.56	24.65	0.53
Reach 1	504.909*	100 - Year	1150.00	469.10	476.26	474.01	477.10	0.000771	7.38	155.84	24.65	0.52
Reach 1	504.909*	500 - Year	2200.00	469.10	479.87	476.21	481.12	0.000801	8.98	244.91	24.65	0.50
Reach 1	490 Brooklyn Street		Bridge									
Reach 1	445.454*	10 - Year	260.00	468.80	471.99		472.42	0.001138	5.26	49.44	21.97	0.62
Reach 1	445.454*	50 - Year	780.00	468.80	474.47		475.34	0.001100	7.51	103.80	21.97	0.61
Reach 1	445.454*	100 - Year	1150.00	468.80	475.90		477.02	0.001116	8.50	135.31	21.97	0.60
Reach 1	445.454*	500 - Year	2200.00	468.80	479.29		481.00	0.001214	10.48	209.88	21.97	0.60
Reach 1	425.636*	10 - Year	260.00	468.70	471.91		472.39	0.001303	5.55	46.88	21.08	0.66
Reach 1	425.636*	50 - Year	780.00	468.70	474.31		475.31	0.001297	8.00	97.54	21.08	0.66
Reach 1	425.636*	100 - Year	1150.00	468.70	475.71		476.98	0.001326	9.06	126.89	21.08	0.65
Reach 1	425.636*	500 - Year	2200.00	468.70	479.00		480.95	0.001456	11.21	196.28	21.08	0.65
Reach 1	405.818*	10 - Year	260.00	468.60	471.81		472.36	0.001558	5.93	43.82	20.19	0.71
Reach 1	405.818*	50 - Year	780.00	468.60	474.09		475.26	0.001618	8.67	89.94	20.19	0.72
Reach 1	405.818*	100 - Year	1150.00	468.60	475.42		476.93	0.001661	9.85	116.81	20.19	0.72
Reach 1	405.818*	500 - Year	2200.00	468.60	478.56		480.88	0.001837	12.21	180.20	20.19	0.72
Reach 1	386	10 - Year	260.00	468.50	471.59	471.36	472.30	0.002273	6.77	38.42	19.30	0.85
Reach 1	386	50 - Year	780.00	468.50	473.60	473.28	475.18	0.002478	10.09	77.32	19.30	0.89

HEC-RAS Plan: New - Plan4 River: Hockanum River Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	386	100 - Year	1150.00	468.50	474.82	474.38	476.84	0.002500	11.40	100.84	19.30	0.88
Reach 1	386	500 - Year	2200.00	468.50	477.60	476.96	480.75	0.002795	14.25	154.43	19.30	0.89
Reach 1	372	10 - Year	260.00	468.50	471.34	471.34	472.24	0.003174	7.64	34.04	19.30	1.01
Reach 1	372	50 - Year	780.00	468.50	473.27	473.27	475.13	0.003023	10.92	71.41	19.30	1.00
Reach 1	372	100 - Year	1150.00	468.50	474.35	474.35	476.77	0.003132	12.48	92.15	19.30	1.01
Reach 1	372	500 - Year	2200.00	468.50	476.95	476.95	480.66	0.003395	15.45	142.35	19.30	1.00
Reach 1	365	10 - Year	260.00	464.00	464.94	466.26	471.60	0.055357	20.71	12.55	13.63	3.80
Reach 1	365	50 - Year	780.00	464.00	466.49	468.61	474.47	0.022471	22.67	34.41	14.66	2.61
Reach 1	365	100 - Year	1150.00	464.00	467.44	469.90	476.10	0.017631	23.61	48.71	15.30	2.33
Reach 1	365	500 - Year	2200.00	464.00	469.75	472.74	479.97	0.013061	25.66	85.72	16.83	2.00
Reach 1	358	10 - Year	260.00	461.70	462.35	463.63	470.89	0.109246	23.44	11.09	17.00	5.12
Reach 1	358	50 - Year	780.00	461.70	463.46	465.72	474.00	0.041771	26.05	29.95	17.00	3.46
Reach 1	358	100 - Year	1150.00	461.70	464.19	466.90	475.65	0.031372	27.16	42.34	17.00	3.03
Reach 1	358	500 - Year	2200.00	461.70	466.10	470.71	479.54	0.021344	29.42	74.78	17.00	2.47
Reach 1	328	10 - Year	260.00	454.00	454.67	456.20	466.69	0.152741	27.83	9.34	14.00	6.00
Reach 1	328	50 - Year	780.00	454.00	455.73	458.57	471.86	0.068467	32.23	24.20	14.00	4.32
Reach 1	328	100 - Year	1150.00	454.00	456.45	459.92	473.86	0.051549	33.48	34.34	14.00	3.77
Reach 1	328	500 - Year	2200.00	454.00	458.41	463.14	478.11	0.034286	35.62	61.76	14.00	2.99
Reach 1	327 Arch Opening		Bridge									
Reach 1	255	10 - Year	260.00	451.10	451.87	453.30	460.87	0.096025	24.08	10.80	14.00	4.83
Reach 1	255	50 - Year	780.00	451.10	452.83	455.68	468.96	0.068478	32.23	24.20	14.00	4.32
Reach 1	255	100 - Year	1150.00	451.10	453.51	457.02	471.59	0.054537	34.12	33.70	14.00	3.88
Reach 1	255	500 - Year	2200.00	451.10	455.36	460.25	476.47	0.037788	36.87	59.67	14.00	3.15
Reach 1	254	10 - Year	260.00	430.00	430.70	432.34	454.00	0.348114	38.74	6.71	12.23	9.22
Reach 1	254	50 - Year	780.00	430.00	431.40	434.00	463.60	0.224102	45.54	17.13	17.49	8.11
Reach 1	254	100 - Year	1150.00	430.00	431.77	434.82	466.84	0.188220	47.52	24.20	20.30	7.67
Reach 1	254	500 - Year	2200.00	430.00	432.60	436.55	472.43	0.140127	50.65	43.43	26.47	6.97
Reach 1	232	10 - Year	260.00	425.00	428.23	426.29	428.25	0.000063	1.25	207.85	104.46	0.16
Reach 1	232	50 - Year	780.00	425.00	425.62	427.25	455.73	0.531466	44.04	17.71	37.15	11.24
Reach 1	232	100 - Year	1150.00	425.00	425.79	427.72	460.53	0.470029	47.30	24.31	41.78	10.93
Reach 1	232	500 - Year	2200.00	425.00	426.17	428.63	467.60	0.360081	51.65	42.59	52.51	10.11
Reach 1	122	10 - Year	260.00	425.00	428.22		428.23	0.000217	0.97	267.51	139.10	0.12
Reach 1	122	50 - Year	780.00	425.00	429.36	427.04	429.41	0.000419	1.83	428.62	144.78	0.18
Reach 1	122	100 - Year	1150.00	425.00	429.96	427.45	430.04	0.000498	2.26	516.93	147.79	0.21
Reach 1	122	500 - Year	2200.00	425.00	431.31	428.27	431.46	0.000633	3.13	719.79	152.58	0.25
Reach 1	53	10 - Year	260.00	425.00	428.14	426.67	428.20	0.000957	1.98	131.67	72.14	0.26
Reach 1	53	50 - Year	780.00	425.00	429.10	427.80	429.33	0.002121	3.89	204.50	79.81	0.41
Reach 1	53	100 - Year	1150.00	425.00	429.58	428.30	429.94	0.002707	4.87	243.41	83.62	0.47
Reach 1	53	500 - Year	2200.00	425.00	430.55	429.40	431.31	0.004071	7.10	328.25	91.91	0.61
Reach 1	48 Ano-Coil Dam		Inl Struct									
Reach 1	0	10 - Year	260.00	394.00	395.37	395.37	395.95	0.017727	6.08	42.73	37.34	1.00
Reach 1	0	50 - Year	780.00	394.00	396.60	396.60	397.66	0.014879	8.28	94.15	44.79	1.01
Reach 1	0	100 - Year	1150.00	394.00	397.24	397.24	398.58	0.013922	9.30	123.66	46.72	1.01
Reach 1	0	500 - Year	2200.00	394.00	398.72	398.72	400.68	0.012537	11.25	195.60	50.43	1.01

ATTACHMENT 5: CULVERT MASTER INPUTS AND OUTPUTS

Culvert Calculator Report
Worksheet-1

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	486.00	ft	Headwater Depth/Height	0.18	
Computed Headwater Eleva	470.22	ft	Discharge	6.00	cfs
Inlet Control HW Elev.	470.16	ft	Tailwater Elevation	469.73	ft
Outlet Control HW Elev.	470.22	ft	Control Type	Entrance Control	

Grades					
Upstream Invert	469.50	ft	Downstream Invert	469.47	ft
Length	2.00	ft	Constructed Slope	0.015000	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	0.35	ft
Slope Type	Steep		Normal Depth	0.28	ft
Flow Regime	Supercritical		Critical Depth	0.41	ft
Velocity Downstream	4.29	ft/s	Critical Slope	0.004248	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	4.00	ft
Section Size	4 x 4 ft		Rise	4.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	470.22	ft	Upstream Velocity Head	0.21	ft
Ke	0.50		Entrance Loss	0.10	ft

Inlet Control Properties					
Inlet Control HW Elev.	470.16	ft	Flow Control	Unsubmerged	
Inlet Type	90 and 15° wingwall flares		Area Full	16.0	ft²
K	0.06100		HDS 5 Chart	8	
M	0.75000		HDS 5 Scale	2	
C	0.04000		Equation Form	1	
Y	0.80000				

Rating Table Report
Worksheet-1

Range Data:			
	Minimum	Maximum	Increment
Allowable HW E	469.50	473.50	0.10 ft

HW Elev. (ft)	Discharge (cfs)
469.50	0.00
469.60	0.00
469.70	0.00
469.80	1.64
469.90	2.48
470.00	3.47
470.10	4.56
470.20	5.74
470.30	7.01
470.40	8.37
470.50	9.80
470.60	11.31
470.70	12.88
470.80	14.53
470.90	16.23
471.00	18.01
471.10	19.84
471.20	21.72
471.30	23.67
471.40	25.67
471.50	27.72
471.60	29.83
471.70	31.98
471.80	34.19
471.90	36.44
472.00	38.74
472.10	41.09
472.20	43.48
472.30	45.92
472.40	48.40
472.50	50.93
472.60	53.49
472.70	56.10
472.80	58.75
472.90	61.44
473.00	64.17
473.10	66.94
473.20	69.75
473.30	72.60
473.40	75.48
473.50	78.41

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT I

FLOOD CONTINGENCY PLAN

ATTACHMENT I
FLOOD CONTINGENCY PLAN

Relocation of the Paper Mill Pond Dam
Vernon, CT

Prior to construction of the proposed dam, the Paper Mill Pond Dam low-level outlet will be fully opened keeping the pond level at the lower end of its normal operating range. It is envisioned that the remaining water in the pond will be prevented from entering the work area via the installation of a temporary cofferdam placed in an arch-shaped arrangement on the upstream side of the Grove Street Bridge. The cofferdam will be constructed with outlet by-pass pipe(s) to allow flow to pass through the cofferdam and along one side of the sluiceway. The sizing of the cofferdam (i.e. top) has been established at elevation 474 (NAVD88) in the Specifications. The temporary cofferdam system shall be a portable cofferdam system which can be installed and removed "in the wet." The temporary cofferdam system shall be a system which does not constitute fill of the waterway and must be completely removable upon the completion of the project.

The contractor will be required to construct a temporary outlet by-pass pipe system to keep the work area in the dry. The size of the bypass will be determined by the contractor. It should be noted that project specifications will require the Contractor to monitor the weather forecast prior to placing the cofferdam, and that installation will be contingent on the prediction of generally dry weather. Refer to drawings in Attachment G for additional information on temporary cofferdam set-up.

The Contractor shall make provision for contingencies to deal with inclement weather, the cost of which shall be incidental to other pay items. In the event of rising waters and increasing flow, the Contractor may be required to act rapidly to protect the work area (i.e. new concrete weir and outlet structure), including removal of personnel and equipment from the raceway and other potentially affected areas. This may also include partial or full removal of the temporary cofferdam. The Contractor may have to demobilize from the potentially affected areas on a temporary basis. Prior to leaving the area, the Contractor shall take such steps as are necessary to protect completed work and work in progress and to remove all equipment and materials from potentially inundated areas. In the event that flood inflows cause the impoundment to rise to an elevation that would threaten the work of this project, the Contractor will be required to remove loose materials and equipment from the work area, until the impoundment level begins to recede.

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT J

SOIL SCIENTIST REPORT

ATTACHMENT J
SOIL SCIENTIST REPORT

Relocation of the Paper Mill Pond Dam
Vernon, CT

According to the *Bedrock Geological Map of Connecticut* (Rodgers, Yale University, 1985), bedrock beneath the Site is mapped as the Glastonbury Gneiss, consisting of light colored medium to coarse grained, well foliated, granitic gneiss.

The *Surficial Materials Map of Connecticut, USGS* (Stone, et. al., 1992) indicates unconsolidated deposits in the southern portion of the Site consist of sand and gravel over sands and transition to glacial tills in the northern portion of the Site. In general, overburden materials from borings completed at the Site were observed to consist of densely packed sands and silts with various amounts of gravel, cobbles and boulders encountered at depth. Foreign materials, such as coal ash, brick and asphalt fragments were observed in soils sampled at several borings, predominately in the northern portion of the Site, indicating that much of the area below the north campus of buildings is underlain by urban fill. The thickness of the overburden materials was found to vary across the Site, from less than 3 feet to 27 feet below grade.

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT K

ENVIRONMENTAL REPORT

ATTACHMENT K
ENVIRONMENTAL REPORT

Relocation of the Paper Mill Pond Dam
Vernon, CT

The dam relocation project involves a limited project area restricted to the mill complex's raceway, Grove Street Bridge and Paper Mill Pond. The project will be accomplished with the pool elevation of the Paper Mill Pond at the minimum level of its normal operating range.

Wetlands: No permanent alterations of wetlands or watercourses are anticipated as a result of the relocation of Paper Mill Pond Dam. The existing dam is located in a man-made sluiceway in the Amerbelle Mill. The proposed dam will be constructed 250 feet upstream in the same man-made sluiceway. The proposed dam will have the same spillway crest elevation as the existing dam. Thus, the hydraulic profile of the Upper Hockanum River will remain the same except for within the sluiceway in the section between the existing and proposed dam. This section will change from stagnant impounded water to free-flowing water. Riprap will be added to the sluiceway downstream of the proposed dam.

A temporary cofferdam will be constructed upstream of the Grove Street Bridge. The cofferdam will be constructed before the existing Paper Mill Pond Dam is removed so the impoundment will not drain. The cofferdam will include outlet by-pass pipes to continue to allow flow through the sluiceway.

There is a low potential that some unintended wetland impact may result from construction equipment or laborers around the Paper Mill Pond. Any disturbed wetland areas at the dam sites will be restored through soil preparation, mulching and re-seeding. The seed mix utilized shall be "New England Erosion Control/Restoration mix or its equivalent. The New England Erosion Control/Restoration mix typically contains the following:

- Swithgrass (Panicum Virgatum),
- Virginia Wild Rye (Elymus Virginicus),
- Creeping Red Fescue (Festuca Rubra),
- Fox Sedge (Carex Vulpinoidea),
- Creeping Bentgrass (Agrostic Stolonifera),
- Soft Rush (Juncus Effusus),
- New England Aster (Aster Novae-Angliae),
- Grass-Leaved Goldenrod (Euthamia Graminifolia),
- Nodding Bur Marigold (Bidens Cernua),
- Green Bulrush (Scirpus Atrovirens),
- Joe-Pye Weed (Eupatorium Maculatum),
- Boneset (Eupatorium Perfoliatum),
- Blue Vervain (Verbena Hastata).

Fish and Wildlife Resources / Streamflows: Under current operating conditions, there are no mandated minimum releases from the Paper Mill Pond Dam spillway into the downstream stream. In addition, the proposed dam relocation will not alter the hydraulic profile of the Upper

Hockanum River besides within the man-made sluiceway. Hydraulic profiles for proposed and existing conditions are included in Attachment H. Therefore, the project is anticipated to have no adverse effect on fish and wildlife resources or stream flow in the Upper Hockanum River.

State & Federal Endangered / Threatened Species and Species of Special Concern: According to the Natural Diversity Data Base maps and files there are no records for State Endangered species in the vicinity of the project.

Water Quality Standards and Designated Uses of Waters of the State: During the Work the impoundment level will be actively managed by diverting flows through the outlet by-pass pipes. The contractor shall use filter bags to filter water pumped from disturbed areas prior to discharging. Please refer to the Drawings in Attachment G.

Private & Public Water Supplies, Groundwater Recharge / Discharge: The project does include the minimal drawdown within normal operational levels of the reservoir. Thus, groundwater resources will not be impacted.

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT L

MITIGATION REPORT

ATTACHMENT L
MITIGATION REPORT

Relocation of the Paper Mill Pond Dam
Vernon, CT

This mitigation report briefly describes the design elements of the proposed project which have been incorporated into the plans and technical specifications that are intended to mitigate impacts to sensitive environmental/water resources resulting from construction of the new dam. The construction activity has been designed to avoid environmental alteration or disturbance where possible. However, some temporary, minor disturbances are likely during construction.

The relocation of the Paper Mill Pond Dam is not expected to impact any wetlands, wild life or fish habitats. There are no identified endangered species in the vicinity of Paper Mill Pond Dam. Sediment and erosion controls will be installed by the contractor prior to the onset of construction activities and will include straw bales, silt fencing, and/or turbidity curtains. The contractor shall use filter bags to filter water pumped from disturbed areas prior to discharging. Please refer to the Drawings in Attachment G.

No permanent alterations of wetlands or watercourses are anticipated as a result of the dam relocation. The dam is being relocated 250 feet upstream within the same man-made sluiceway. The current and proposed locations are within a mill complex. The mill complex is a Brownfield redevelopment site.

Along the banks of Paper Mill Pond, a temporary cofferdam will be constructed with outlet by-pass pipes. Although the work has been designed to reduce the possibility of temporary disturbance of wetland areas adjacent to the Paper Mill Pond, a limited area may be temporarily disturbed by construction activities. If any wetlands are disturbed during the repairs, these areas will be restored through soil preparation and re-seeding. The seed mix utilized shall be "New England Erosion Control/Restoration mix or its equivalent. The New England Erosion Control/Restoration mix typically contains the following:

- Swithgrass (Panicum Virgatum),
- Virginia Wild Rye (Elymus Virginicus),
- Creeping Red Fescue (Festuca Rubra),
- Fox Sedge (Carex Vulpinoidea),
- Creeping Bentgrass (Agrostic Stolonifera),
- Soft Rush (Juncus Effusus),
- New England Aster (Aster Novae-Angliae),
- Grass-Leaved Goldenrod (Euthamia Graminifolia),
- Nodding Bur Marigold (Bidens Cernua),
- Green Bulrush (Scirpus Atrovirens),
- Joe-Pye Weed (Eupatorium Maculatum),
- Boneset (Eupatorium Perfoliatum),
- Blue Vervain (Verbena Hastata).

Natural Diversity Data Base Areas

VERNON, CT

September 2015

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

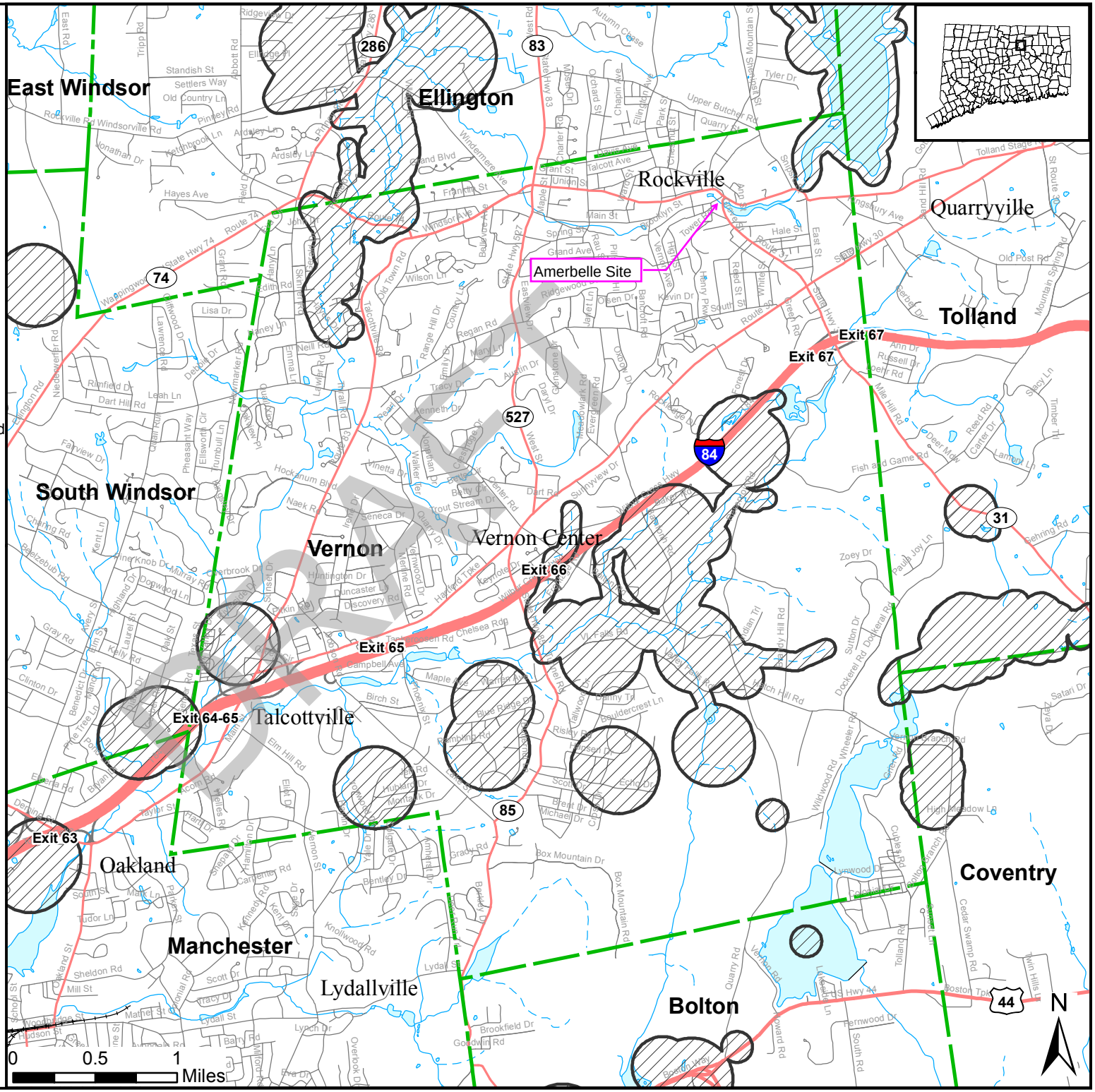
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT M

ALTERNATIVES ASSESSMENT

ATTACHMENT M
ALTERNATIVES ASSESSMENT

Relocation of the Paper Mill Pond Dam
Vernon, CT

Through the course of the initial design assessment for the redevelopment of the mill site, various alternatives were considered for Paper Mill Pond Dam. Regarding the Paper Mill Pond Dam, in general, the following alternatives were considered and considered infeasible for the project:

1. No Action - The "No Action" alternative was not considered because the spillway and low-level outlet are in need of repair. Some of the concrete on the spillway is crumbling and the low-level outlet pipe has partially collapsed and is partially filled.
2. Postponing Action - The "Postponing Action" alternative is not feasible because the Town of Vernon wants to repair/relocate the Paper Mill Pond Dam alongside the demolition of the Amerbelle Mill site. The Amerbelle Mill site demolition is expected to occur in the summer of 2016. Construction activities regarding the dam will occur directly after the demolition process.
3. Dam Breach/Removal - The "dam breach/removal" alternative was not considered a viable option due to the fact that the impoundment serves as a recreational and aesthetic resource for its abutting properties. Furthermore, a dam in the sluiceway is needed to maintain the water surface level of Paper Mill Pond.
4. Conducting the proposed activity at a different location – Other dam locations were originally considered but eliminated based on the needs and limits of the project. The dam is being relocated 250 feet upstream of its current location because:
    a. The new dam location allows a smaller dam with the same spillway crest elevation, thus retaining the Paper Mill Pond normal pool;
    b. Moving the dam upstream allows a lower water level within the sluiceway and free-flowing water, allowing easier maintenance and inspection;
    c. The location is still on the Town of Vernon's property. The dam cannot be placed upstream of Grove Street because the Town of Vernon does not own that land.

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT N

APPLICANT COMPLIANCE INFORMATION FORM

Connecticut Department of
Energy & Environmental Protection

Applicant Compliance Information

DEEP ONLY
App. No. _____
Co./Ind. No. _____

Applicant Name: Town of Vernon

Mailing Address: **55 West Main Street**

City/Town: **Vernon** State: **CT** Zip Code: **06066**

Business Phone: **860-870-3663** ext.:

Contact Person: **David Smith** Phone: **860-870-3663** ext.

*E-mail: **dasmith@vernon-ct.gov**

If you answer *yes* to any of the questions below, you must complete the Table of Enforcement Actions on the reverse side of this sheet as directed in the instructions for your permit application.

A. During the five years immediately preceding submission of this application, has the applicant been convicted in any jurisdiction of a criminal violation of any environmental law?

☐ Yes ☒ No

B. During the five years immediately preceding submission of this application, has a civil penalty been imposed upon the applicant in any state, including Connecticut, or federal judicial proceeding for any violation of an environmental law?

☐ Yes ☒ No

C. During the five years immediately preceding submission of this application, has a civil penalty exceeding five thousand dollars been imposed on the applicant in any state, including Connecticut, or federal administrative proceeding for any violation of an environmental law?

☐ Yes ☒ No

D. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal court issued any order or entered any judgement to the applicant concerning a violation of any environmental law?

☐ Yes ☒ No

E. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal administrative agency issued any order to the applicant concerning a violation of any environmental law?

☐ Yes ☒ No

Table of Enforcement Actions

(1) Type of Action	(2a) Date Commenced	(2b) Date Terminated	(3) Jurisdiction	(4) Case/Docket/ Order No.	(5) Description of Violation

☐ Check the box if additional sheets are attached. Copies of this form may be duplicated for additional space.

DAM CONSTRUCTION PERMIT APPLICATION

ATTACHMENT O

APPLICANT BACKGROUND INFORMATION FORM

Connecticut Department of
Energy & Environmental Protection

Applicant Background Information

Check the box by the entity which best describes the applicant and complete the requested information.
You must choose one of the following: corporation, limited liability company, limited partnership, general partnership, voluntary association and individual or business type.

☐ **Corporation**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Parent Corporation
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   Contact Person: Phone: ext.
   E-mail:
2. Subsidiary Corporation:
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   Contact Person: Phone: ext.
   E-mail:
3. Directors:
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   E-mail:
4. Officers:
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   E-mail:

Applicant Background Information (continued)

☐ **Limited Liability Company**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List each member.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

2. List any manager(s) who, through the articles of organization, are vested the management of the business, property and affairs of the limited liability company.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Applicant Background Information (continued)

☐ **Limited Partnership**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

2. Limited Partners:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Applicant Background Information (continued)

☐ **General Partnership**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Applicant Background Information (continued)

☐ **Voluntary Association**

☐ Check box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List authorized persons of association or list all members of association.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

☒ **Individual or Other Business Type**

☐ Check the box, if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Name: **Town of Vernon**
Mailing Address: 55 West Main Street
City/Town: Vernon State: CT Zip Code: 06066
Business Phone: 860-870-3663 ext.:
E-mail: dasmith@vernon-ct.gov

2. State other names by which the applicant is known, including business names.
Name: **David Smith, P.E. , Town Engineer**

US Army Corps of Engineers®
New England District

Appendix 1A: Category 1 Certification Form
(Required for all Inland Projects in Connecticut)

Submit this form **before** work commences to the following addresses:

U.S. Army Corps of Engineers, Permits & Enforcement Branch B (CT), 696 Virginia Road, Concord, MA 01742-2751

CT DEP, Inland Water Resources Division, 79 Elm Street, Hartford, CT 06106-5127 (not required if work is done within exterior boundaries of Mashantucket)

Permittee Name & Address: Town of Vernon

Phone number & Email address: c/o David Smith, 860-870-3663, dasmith@vernon-ct.gov

Work Location/Address: 104 East Main Street, Vernon, CT 06066

Latitude/Longitude coordinates: 41.8667, -72.4425

Waterway name: Hockanum River

Contractor Name & Address: TBD (biding anticipated for early March 2016)

Phone number & Email address: TBD

Proposed Work Dates: Start: June 2016 Finish: September 2016

Work will be done within Inland Waters & Wetlands under the following categories – refer to Appendix 1 (check all that apply):

__X__ 1.A. New Fill and/or Fill Associated with Excavation

_____1.B. Stream Bank Stabilization

_____ 1.C. Repair & Maintenance of Existing Authorized or Grandfathered Fill.

Wetland impact: __0__ square feet (sf) Waterway impact: __990__sf and/or _____ linear feet

Brief Project Description Relocation of Paper Mill Pond Dam within existing man-made raceway. Temporary impacts include about 1100 SF in pond from cofferdam.

Project purpose: Facilitate the redevelopment and reuse of former mill site by the Town of Vernon.

Secondary Impacts include but are not limited to impacts to inland waters or wetlands drained, dredged, flooded, cleared or degraded resulting from a single and complete project. See General Condition 3.

Does your project include any of these secondary impacts? Y/N – If yes, please describe them:

No

Your signature below, as permittee, indicates that you accept and agree to comply with the terms, eligibility criteria, and general conditions of Category 1 of this Connecticut General Permit.

Permittee Signature: _____ **Date:** _____

ATTACHMENT A
EXECUTIVE SUMMARY

Relocation of the Paper Mill Pond Dam
Vernon, CT

On behalf of Town of Vernon, GZA GeoEnvironmental, Inc. (GZA) is submitting a CTDEEP Dam Construction Permit application for the proposed relocation of the Paper Mill Pond Dam. Paper Mill Pond Dam is located at the former Amerbelle Mill at North Main Street in Vernon, Connecticut. A locus plan is included at Figure 1. The Town of Vernon (dam owner) has received funding from the Connecticut Remedial Action and Redevelopment Municipal Grant Program, provided by the State of Connecticut Department of Economic and Community Development (DECD), to facilitate redevelopment and reuse of the site for commercial use. The project is one of twelve brownfield redevelopment projects in the state to receive funding from the grant. The dam is being relocated a couple hundred feet upstream to facilitate the redevelopment and reuse of the mill site.

The Upper Hockanum River flows from southeast to northwest through the Amerbelle Mill complex in a combined reinforced concrete and stone-lined rectangular raceway. The majority of the raceway runs beneath buildings. Upstream of the site the river forms Paper Mill Pond. The river enters the mill site after it passes underneath Grove Street. Refer to Figure 2 for an orthophoto site map. The Paper Mill Pond Dam is located within the raceway inside a courtyard surrounded by mill buildings. After the river exits the mill site, it discharges into Anocoil (aka American Mill) Pond, which is impounded by Anocoil Dam (aka Hockanum Reservoir Dam).

The existing Paper Mill Pond Dam (CTDEEP #14606) is classified as Class C (High Hazard). Based on the Phase I report (published by the USACE in March, 1981), the existing dam includes an approximate 17 foot long concrete spillway and a concrete platform for outlet works control. The spillway crest elevation and platform elevation are 473.2 feet and 478.7 feet, respectively (NAVD88). The height of the spillway and platform are 11.2 feet and 16.7 feet, respectively. Stone and concrete building foundations form the abutments at each end of the dam. The spillway has a low-level outlet of believed to be 48-inches in diameter. The spillway controls the hydraulic head of the raceway upstream of the dam and the Paper Mill Pond.

Proposed Construction Activities

This permit application includes a set of drawings (Attachment G) which describes the proposed reconstruction of the dam. The proposed construction includes the following:

1. Removal of the dam at its current location, which will be performed with demolition of the surrounding buildings;
2. Reconstruction/relocation of the dam about 250 feet upstream of the existing location. This location is still within the raceway and within the limits of the former mill complex. The proposed dam is a reinforced concrete ogee weir with a low level outlet gate on the right. The proposed dam is composed of a 20-foot long spillway at crest elevation 473.2 feet. The proposed spillway height is 3.7 feet. The dam will be constructed in two phases. In Phase I, a cofferdam will be constructed upstream with

outlet by-pass pipes to route flow through the left side of the channel. The right side of the dam will be constructed. In Phase II, the outlet by-pass pipes will be placed to route streamflow through the newly constructed 4ft. x 4ft. low-level outlet slide gate, on the right side of the channel. The left side of the dam will be constructed.

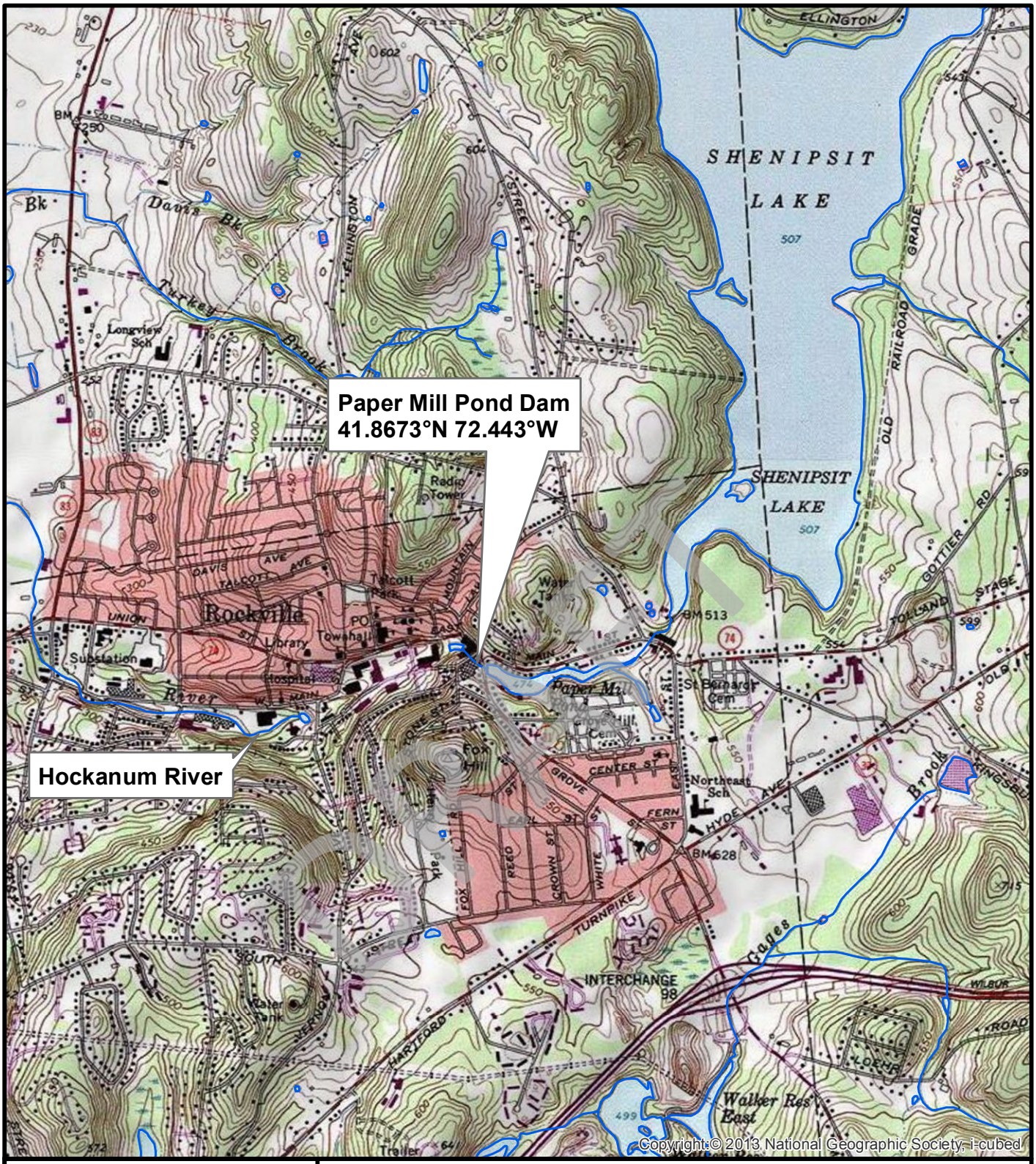
No permanent alterations of wetlands or watercourses are anticipated as a result of the relocation of Paper Mill Pond Dam. The existing and proposed dam have the same spillway crest elevation (473.2 feet) and similar lengths. For construction activities, the existing Paper Mill Pond Dam low-level outlet will be fully opened to allow the pond elevation to reach the minimum of its normal operating level. The cofferdam upstream of Grove Street will be constructed before the removal of the existing dam to maintain control of the pond level during the relocation of the dam.

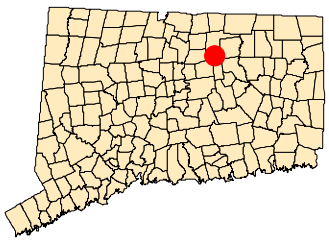
Engineering Analyses

Hydrologic and Hydraulic (H&H) computations and modeling were conducted for the design and are included in Attachment H. The crest of the new spillway will be at the same elevation as the former structure. Thus, there will be no appreciable change in the hydraulic characteristics within the raceway or at Paper Mill Pond.

Construction Schedule

The demolition of the Amerbelle site is currently anticipated to begin in April of 2016. The dam removal and construction will be performed once demolition is complete, likely in August of 2016.





0 1,000 2,000 4,000 Feet

Basemap from ESRI USA Topo Maps

N W E S

J:\Branch\NORWOOD\PHB\Amerbelle Vernon CT Paper Mill Pond Dam\Figures\GIS\mxd\Locus.mxd

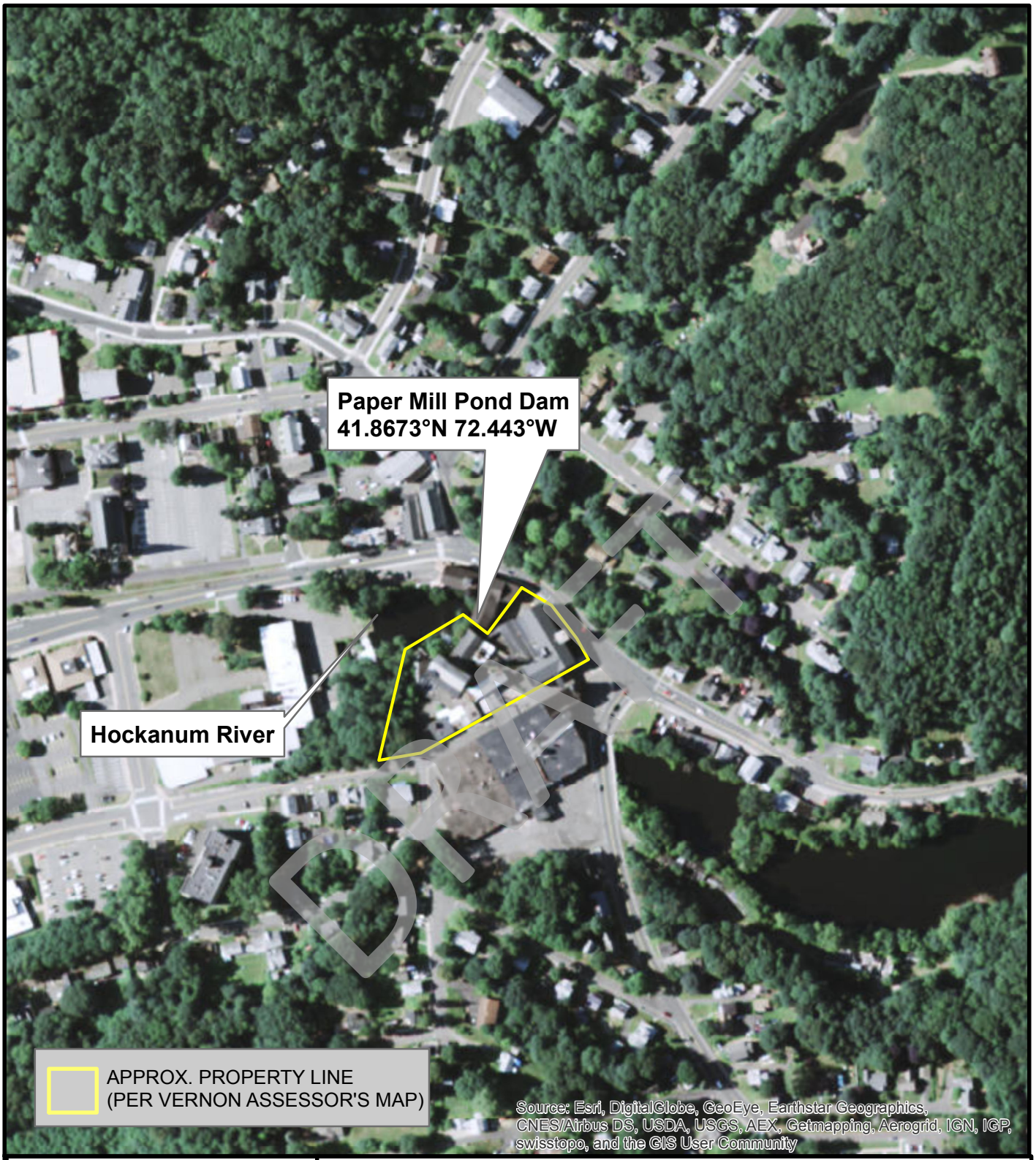
PROJ. MGR.: PHB
DESIGNED BY: CES
REVIEWED BY: PHB
OPERATOR: CES
DATE: 02/2/2016

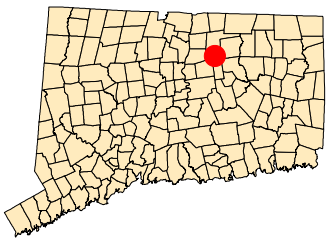
LOCUS MAP
PAPER MILL POND DAM, CT DEEP #14606

FORMER AMERBELLE MILL
TOWN OF VERNON, CONNECTICUT

JOB NO. 05.0045441.01

FIGURE NO. 1





0 250 500 1,000 Feet

N W E S

Basemap from ESRI World Imagery Maps

J:\Branch\NORWOOD\PHB\Amerbelle Vernon CT Paper Mill Pond Dam\Figures\GIS\mxd\Aerial.mxd

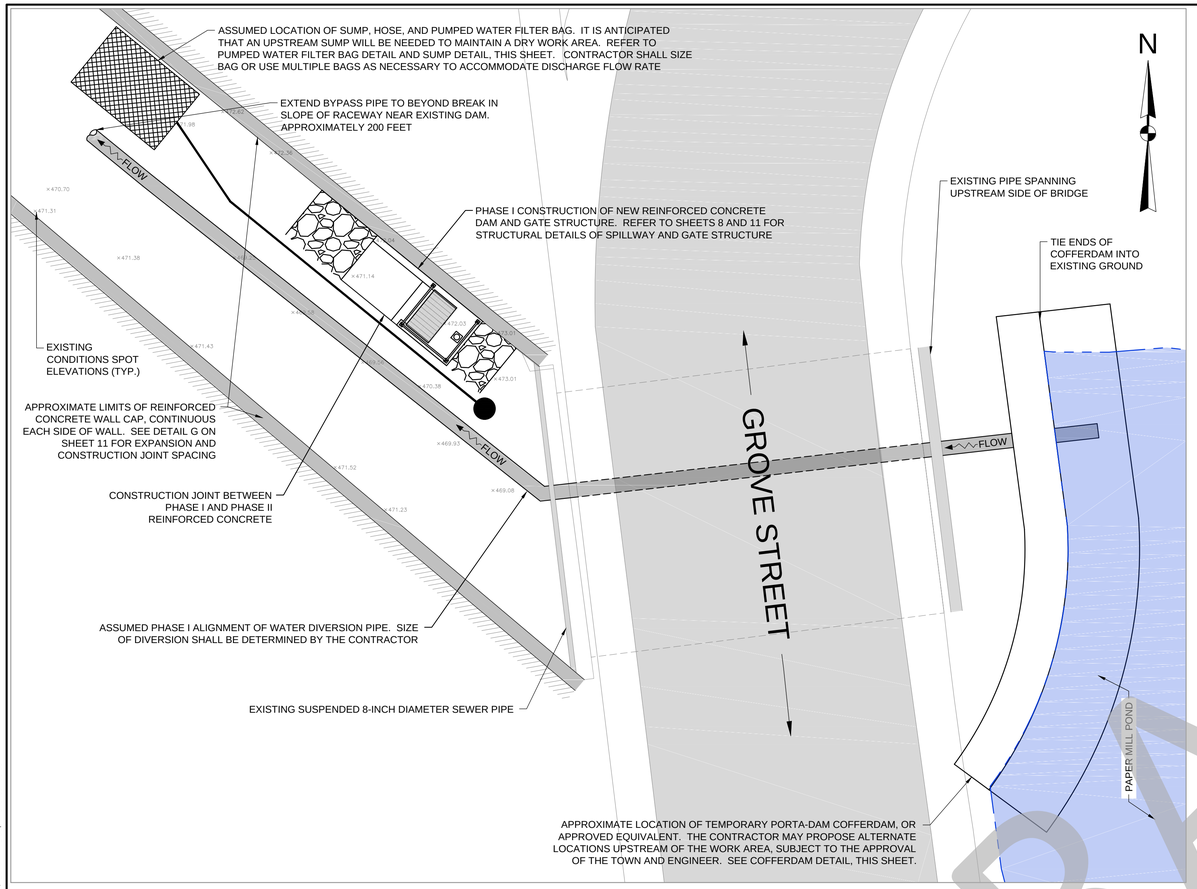
PROJ. MGR.: PHB
DESIGNED BY: CES
REVIEWED BY: PHB
OPERATOR: KCM
DATE: 02/2/2016

AERIAL PHOTOGRAPH
PAPER MILL POND DAM, CT DEEP #14606

FORMER AMERBELLE MILL
TOWN OF VERNON, CONNECTICUT

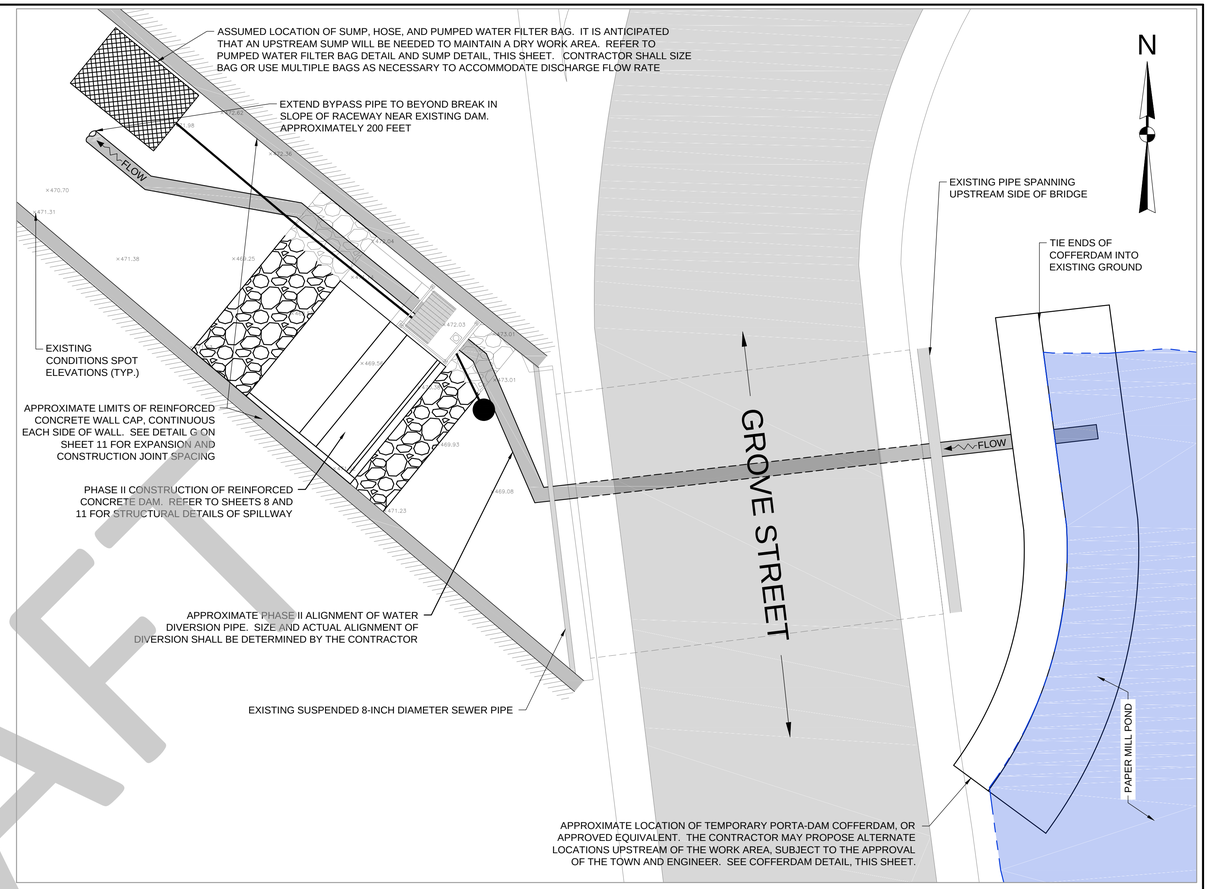
JOB NO.
05.0045441.01

FIGURE NO.
2



PHASE I - SCHEMATIC WATER CONTROL AND CONSTRUCTION PHASING PLAN

NOT TO SCALE



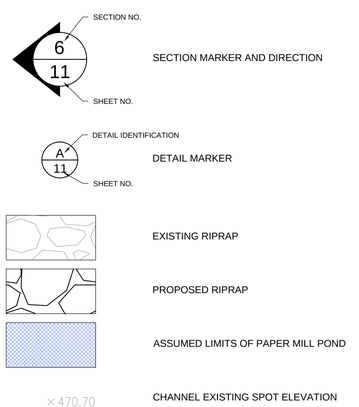
PHASE II - SCHEMATIC WATER CONTROL AND CONSTRUCTION PHASING PLAN

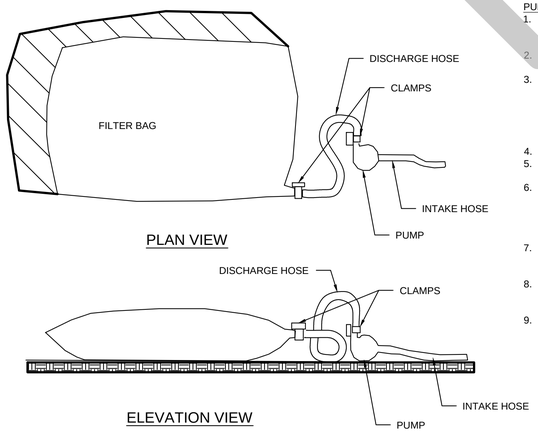
NOT TO SCALE

GENERAL CONSTRUCTION PHASING NOTES:

1. IT IS ANTICIPATED THAT THE DAM CONSTRUCTION WILL FOLLOW BUILDING DEMOLITION ACTIVITIES AT THE SITE.
2. THE DAM LOCATION IS WITHIN AN APPROXIMATELY 15 FOOT HIGH RACEWAY CHANNEL. EQUIPMENT ACCESS WILL LIKELY BE LIMITED.
3. THE CONTRACTOR SHALL ENSURE EQUIPMENT, MATERIALS, OR OTHER LOADS DO NOT DAMAGE THE EXISTING WALLS OR CAUSE THEM TO BECOME UNSTABLE.

LEGEND



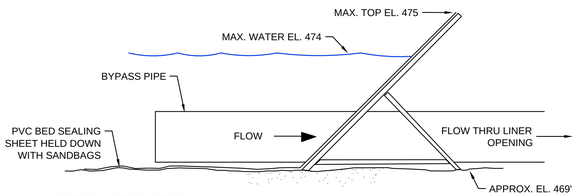


PUMPED WATER FILTER BAG DETAIL

NOT TO SCALE

PUMPED WATER FILTER BAG NOTES:

1. CONTRACTOR SHALL LOCATE FILTER BAG TO COMPLY WITH REQUIREMENTS BELOW. LOCATION IS SUBJECT TO APPROVAL BY THE ENGINEER.
2. FILTER BAGS SHALL BE USED TO FILTER WATER PUMPED FROM DISTURBED AREAS PRIOR TO DISCHARGING.
3. FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. CONTRACTOR SHALL PROVIDE A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY (FOR DISPOSAL PURPOSES).
4. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL.
5. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
6. BAGS SHALL BE LOCATED IN THE RACEWAY CHANNEL DOWNSTREAM OF THE WORK AREA. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PLACE STONE TO PROVIDE A STABLE LOCATION FOR THE FILTER BAG.
7. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
8. THE PUMPING RATE SHALL BE NO GREATER THAN 100 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
9. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.



OPTIONAL ATTACHMENTS:
- BACK BRACE POLE
- HORIZONTAL, ADDITIONAL BRACING
- SINGLE FRAME ATTACHMENTS FOR IRREGULAR CONTOURS

PHASE 1: OUTLET BY-PASS PIPES SUCH THAT BY-PASS FLOW IS ROUTED THROUGH LEFT SIDE OF CHANNEL

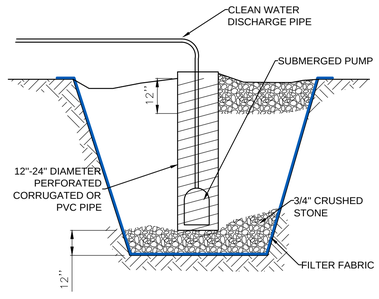
PHASE 2: OUTLET BY-PASS PIPES SUCH THAT BY-PASS FLOW IS ROUTED THROUGH NEWLY CONSTRUCTED LOW-LEVEL OUTLET GATE

NOTES:

1. OTHER COFFERDAM SYSTEMS (i.e. WATER FILLED BLADDER, SAND FILLED SUPER SACKS, OR SIMILAR SYSTEMS) MAY BE USED PROVIDED THEY HAVE EQUAL OR LESSER TEMPORARY IMPACTS TO WETLANDS RESOURCES AND ARE APPROVED FOR USE BY THE ENGINEER.
2. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT TO DESIGN AND STAMP THE TEMPORARY COFFERDAM PROPOSED FOR USE IN THE WORK AT NO ADDITIONAL COST TO THE OWNER.

SCHEMATIC COFFERDAM DETAIL

NOT TO SCALE



DEWATERING SUMP DETAIL

NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

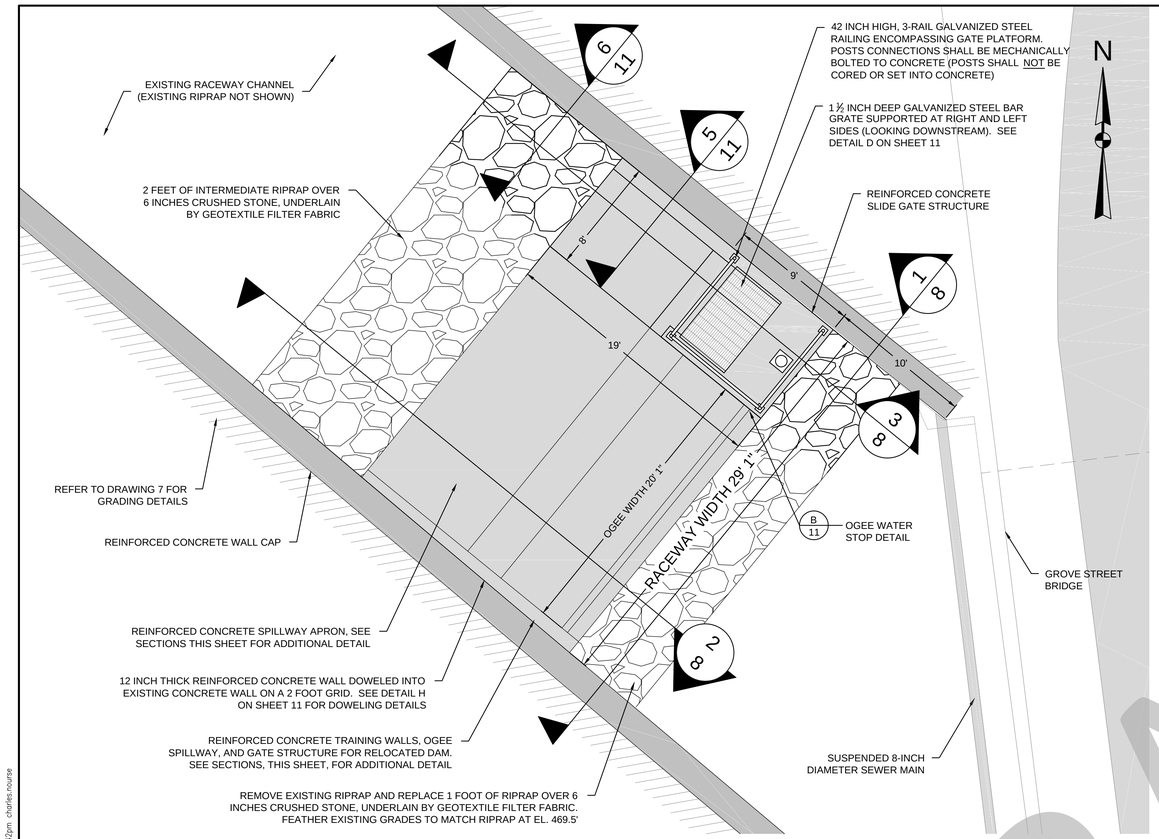
CONSTRUCTION PHASING AND WATER CONTROL PLAN
DAM

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
THE TOWN OF
VERNON, CONNECTICUT

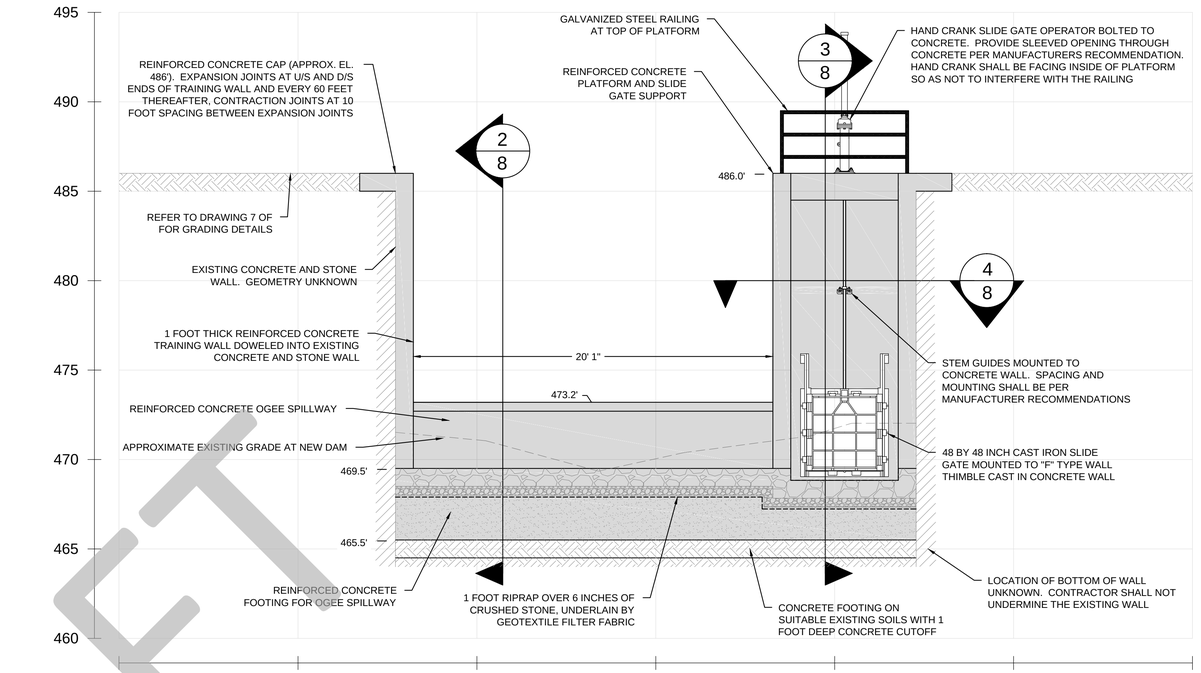
PROJ MGR:	CBN	REVIEWED BY:	PHB	CHECKED BY:	CWC
DESIGNED BY:	CBN	DRAWN BY:	CBN	SCALE:	AS NOTED
DATE:	2-12-2016	PROJECT NO.	05.0045441.05	REVISION NO.	

FIGURE 5



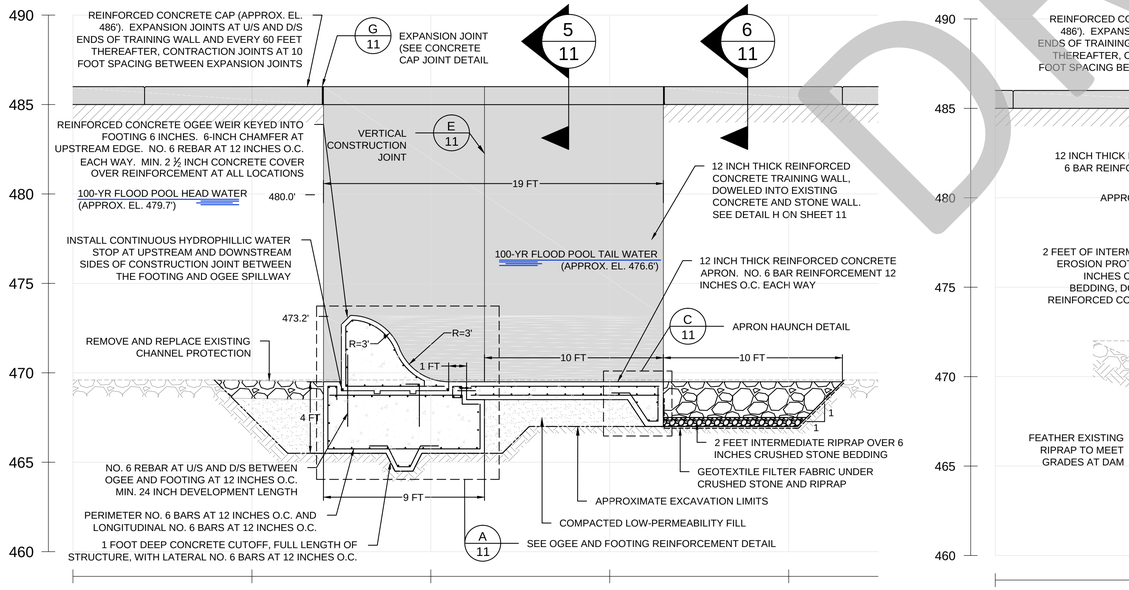
FINAL CONDITIONS PLAN VIEW OF NEW DAM STRUCTURE

SCALE: 1" = 5'



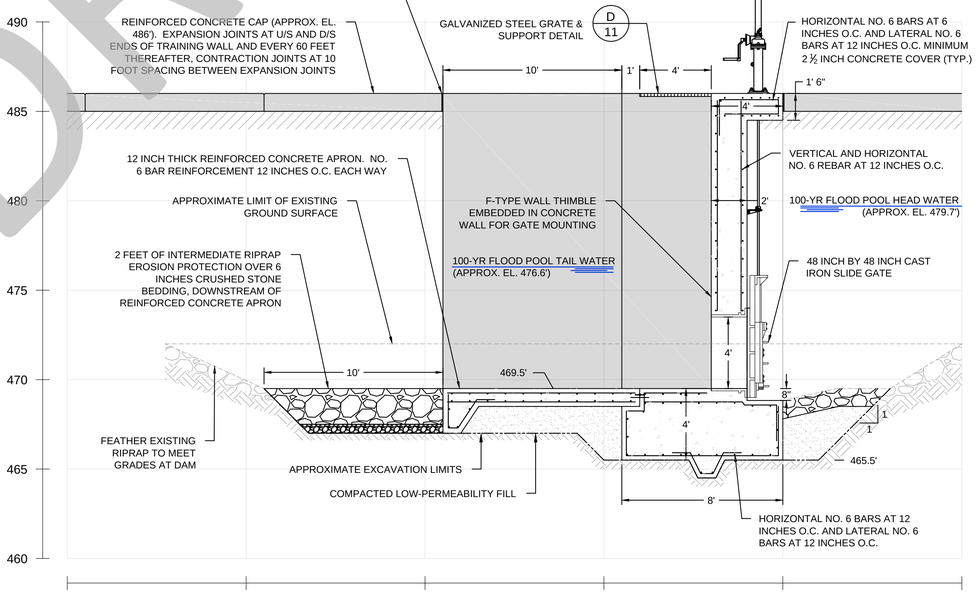
1/8 ELEVATION VIEW

SCALE: 1" = 4'



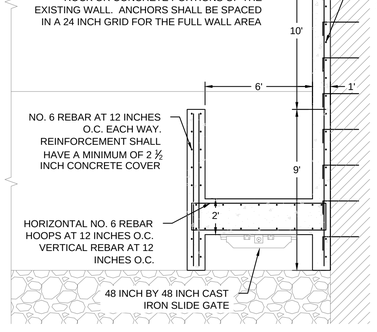
2/8 OGEE SPILLWAY SECTION VIEW

SCALE: 1" = 4'



3/8 LOW-LEVEL OUTLET SECTION VIEW

SCALE: 1" = 4'



4/8 LOW LEVEL OUTLET STRUCTURE SECTION VIEW

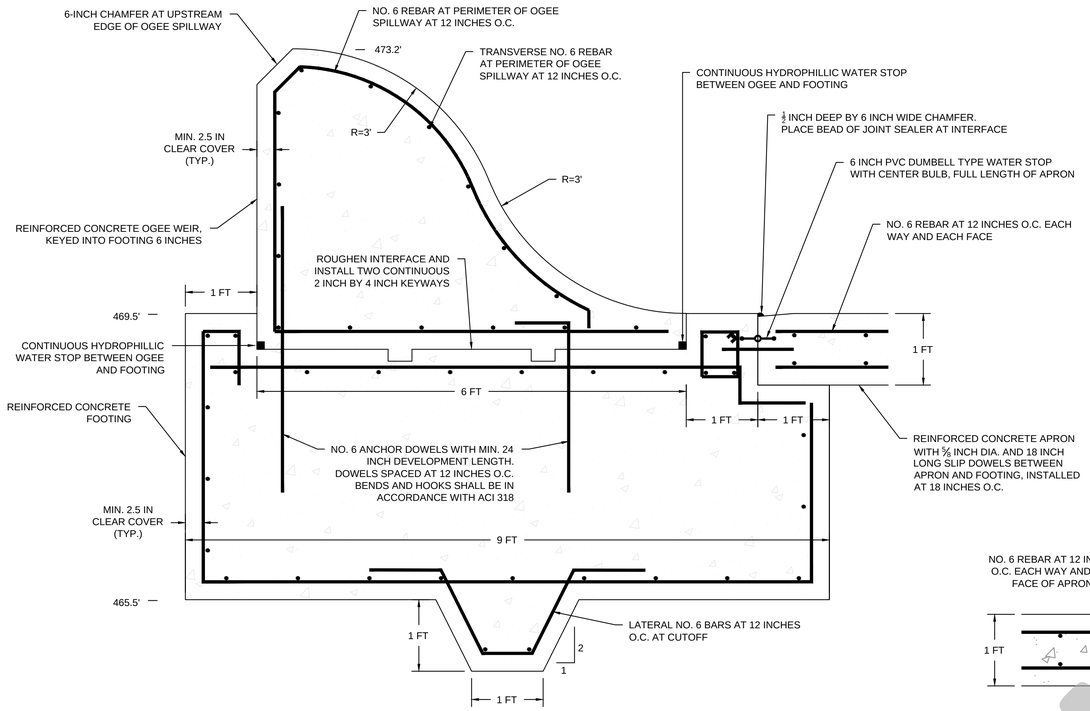
SCALE: 1" = 4'

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

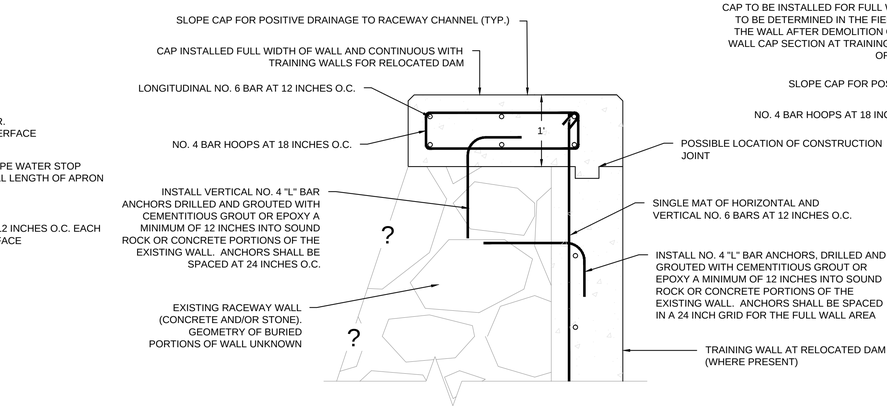
FINAL CONDITIONS AND SECTIONS DAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: THE TOWN OF VERNON, CONNECTICUT	
PROJ MGR: CBN	REVIEWED BY: PHB	CHECKED BY: CWC	FIGURE 8
DESIGNED BY: CBN	DRAWN BY: CBN	SCALE: AS NOTED	
DATE: 2-12-2016	PROJECT NO. 05.0045441.05	REVISION NO.	



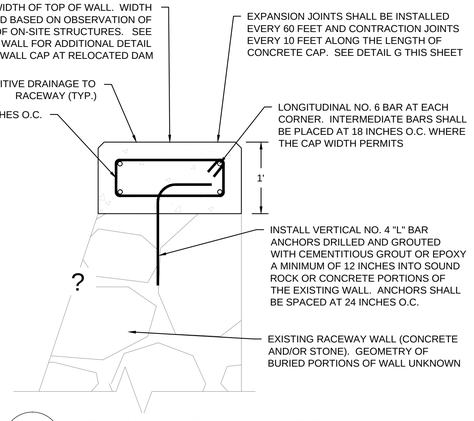
A 8 OGEE AND FOOTING REINFORCEMENT DETAIL

0 6" 1' 2'
SCALE: 1" = 1'



5 8 REINFORCED CONCRETE WALL CAP AT RELOCATED DAM TRAINING WALLS

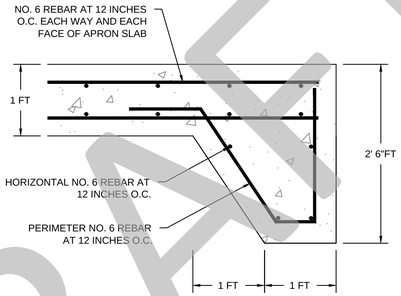
0 6" 1' 2'
SCALE: 1" = 1'



6 8 REINFORCED CONCRETE WALL CAP

0 6" 1' 2'
SCALE: 1" = 1'

NOTES:
1. REINFORCED CONCRETE WALL CAP SHALL BE INSTALLED FOR FULL LENGTH OF EXPOSED RACEWAY WALL AFTER DEMOLITION WORK. THE CAP SHALL ENCOMPASS THE FULL WIDTH OF THE TOP OF RACEWAY WALL. THIS WIDTH SHALL BE DETERMINED IN THE FIELD AFTER DEMOLITION ACTIVITIES EXPOSE THE TOP OF WALL.



C 8 APRON HAUNCH DETAIL

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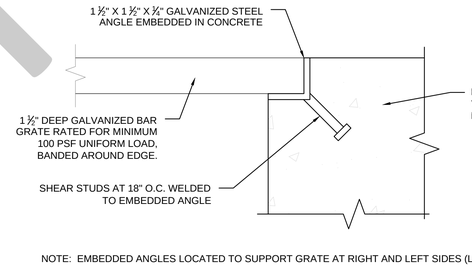
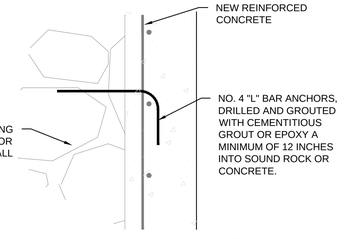
SCALE: 1" = 1'



NOTE: EMBEDDED ANGLES LOCATED TO SUPPORT GRATE AT RIGHT AND LEFT SIDES (LOOKING DOWNSTREAM)

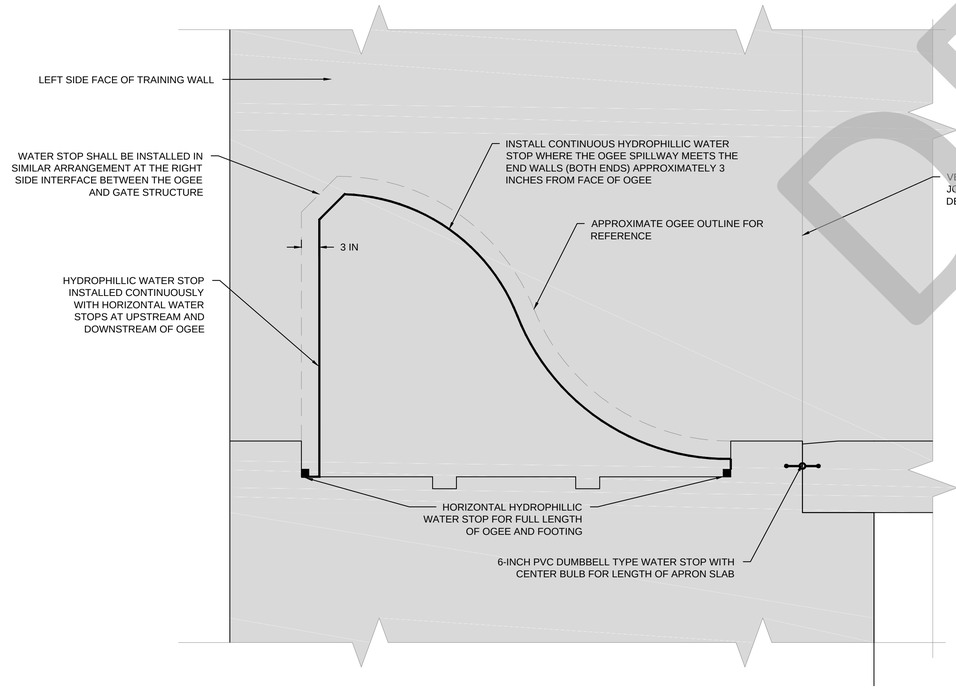
D 8 GALVANIZED STEEL GRATE AND SUPPORT DETAIL

NOT TO SCALE



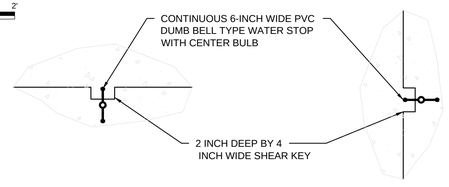
H 8 ANCHOR DOWEL DETAIL

NOT TO SCALE



B 8 OGEE WATER STOP DETAIL

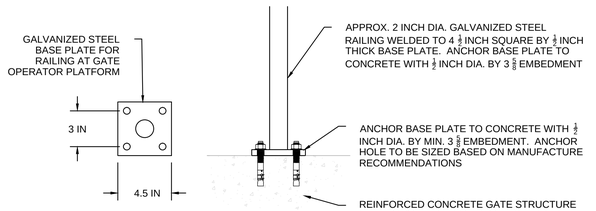
0 6" 1' 2'
SCALE: 1" = 1'



HORIZONTAL C.J. VERTICAL C.J.

E 8 TYPICAL CONSTRUCTION JOINT DETAIL

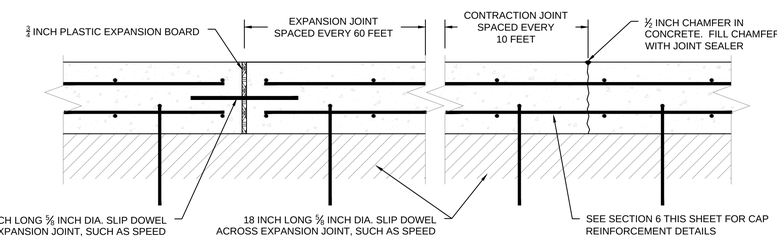
NOT TO SCALE



PLAN SECTION

F 8 RAILING CONNECTION DETAIL

0 3" 6" 12"
SCALE: 1" = 6"



EXPANSION JOINT CONTRACTION JOINT

NOTE: EXPANSION JOINTS SHALL BE INSTALLED WHERE THE CAP MEETS THE UPSTREAM AND DOWNSTREAM END OF THE RELOCATED DAM TRAINING WALLS.

G 8 CONCRETE CAP JOINT DETAIL

NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
FORMER AMERBELLE MILL - PHASE 2

MISCELLANEOUS DETAILS
DAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: THE TOWN OF VERNON, CONNECTICUT	
PROJ MGR: CBN	REVIEWED BY: PHB	CHECKED BY: CWC	FIGURE 11
DESIGNED BY: CBN	DRAWN BY: CBN	SCALE: AS NOTED	
DATE: 2-12-2016	PROJECT NO. 05.0045441.05	REVISION NO.	

ATTACHMENT J
HYDRAULIC AND HYDROLOGIC INFORMATION

ATTACHMENT J
HYDRAULIC AND HYDROLOGIC INFORMATION

PURPOSE AND INTENT OF DATA

The Engineer has compiled the data contained herein regarding certain theoretical hydrologic and hydraulic characteristics of the Upper Hockanum River and its watershed, along with water surface profile (hydraulic) data for the raceway and Paper Mill Pond. This information is presented **FOR INFORMATION ONLY**. Neither the Town nor the Engineer make any assurances as to the accuracy of the information depicted in this section. The Contractor is responsible for making his own assumptions, interpretations, and conclusions based on the data presented herein. The Contractor may, at his or her own expense, make additional investigations to confirm the information presented herein.

STREAMFLOW DATA

Paper Mill Pond is an impoundment created by the existing concrete dam located at the far end of the raceway. The pond is situated along the Upper Hockanum River. At this location, the river does not contain a gauging station. Thus, there are no streamflow records for the work area. However, the U.S. Geological Survey (USGS) does provide on-line information that estimates streamflow statistics for ungauged river locations.

StreamStats Reference: The StreamStats program for Connecticut, U.S. Geological Survey, 2012, online at http://water.usgs.gov/osw/streamstats/connecticut.html.

A summary of flow duration data, for various seasons of the year, is provided as Figure 1 at the end of this Attachment. This information was summarized for the data available from StreamStats.

FLOOD FLOWS

The information on flows and water surface elevations provided below was obtained from "Flood Insurance Study Town of Vernon, Connecticut", Federal Emergency Management Agency, Revised August 9, 1999. This hydrologic information is presented for informational purposed only. No warranty, expressed or implied, is made on the accuracy of the information herein.

Table 1: Flood Flow Frequency Information at Paper Mill Pond

Storm Return Period (years)	Approximate Inflow (cubic feet per second)
10-year	260
50-year	780
100-year	1,150
200-year	2,200

WATER SURFACE ELEVATION INFORMATION

The Engineer has estimated the resultant water surface profiles along the raceway channel up through Paper Mill Pond. These hydraulic profiles were developed for the FEMA-derived flood flows: 10, 50, 100, and 500-year return periods. The hydraulic analyses were executed for three separate conditions and are graphically summarized at the end of this Attachment: Existing Conditions (Figure 2); with Existing Dam Removed (Figure 3); and with New Dam In-Place (Figure 4).

The Contractor is responsible for making his or her own interpretation of possible precipitation and/or resultant flow conditions, and is responsible for all such decisions which may affect Contractor's water control and construction methods or associated cost of construction. The information summarized in Figures 2 through 4 were developed using standard engineering methods. Actual conditions may differ from those presented below.

GROUNDWATER LEVEL DATA

During the performance of various rounds of environmental investigations, seventeen monitoring wells were installed on the Site and two monitoring wells were installed at the abutting Daniel's Mill property to the north. As indicated in the attached Table 2, the majority of these wells were installed within the bedrock surface. Groundwater was encountered at depths ranging from 3.2 to 32.8 feet below grade within these wells. Based on an arbitrary elevation datum of 100 feet, as indicated in the attached October 2015 Bedrock Groundwater Contour Plan, groundwater is inferred to flow across the Site generally to the north/northwest towards American Mill Pond. Flow off Site and to the northeast in the northeast corner of the site is inferred to flow back toward American Mill Pond to the southwest, creating a zone of convergence to the northwest of Building 11, with flow within that zone being generally to the west to American Mill Pond.

This groundwater information is provided for informational purposes only and the Contractor shall make his/her own assumptions regarding groundwater levels and flows based on Site conditions. It is noted that the impoundment remains at a relatively steady elevation upstream of the Dike. Such locations are generally subject to orthographic groundwater outflow from the surrounding higher elevation slopes.

FLOOD CONTROL OPERATIONS

There are no written operation records for the raceway, Paper Mill Pond Dam or for the Paper Mill Pond.

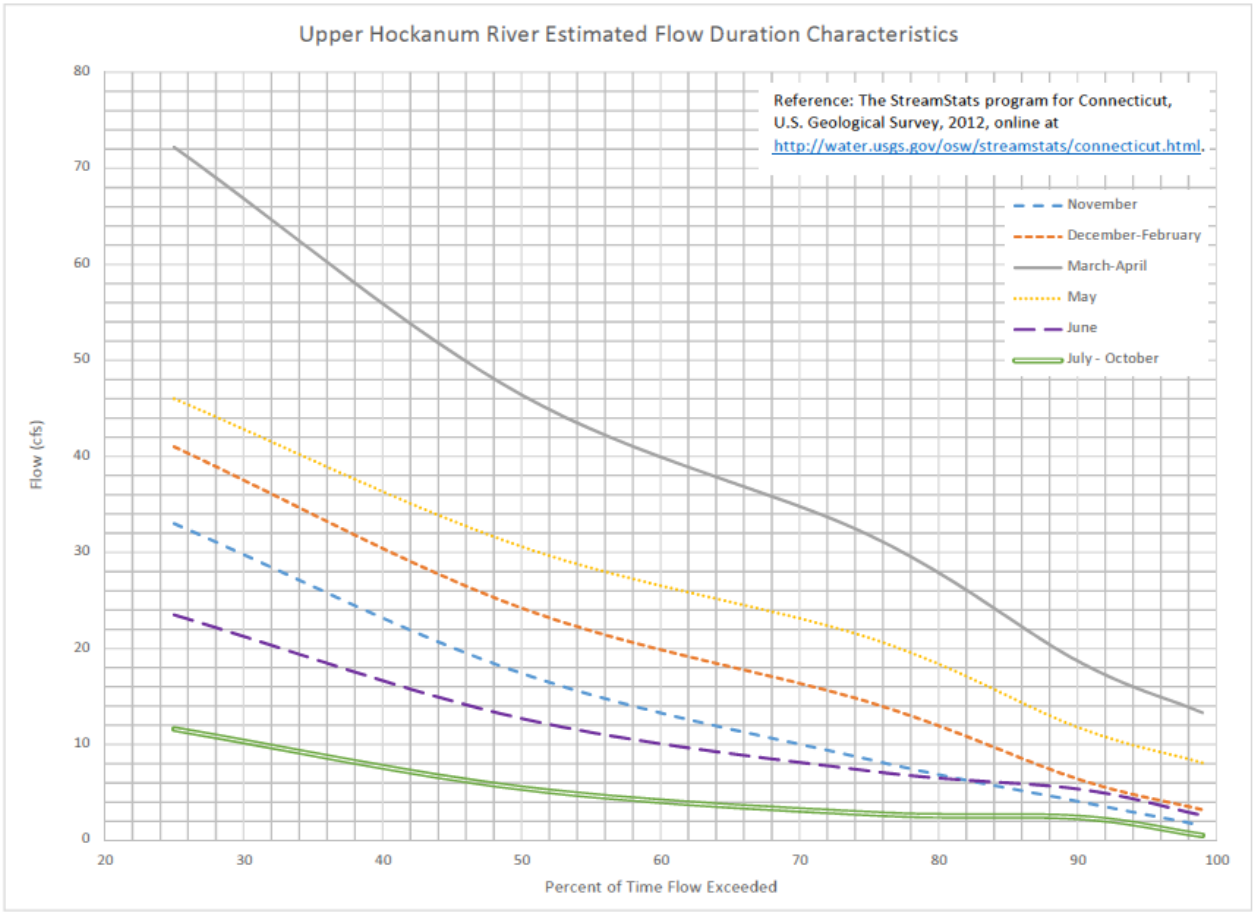


Figure 1 – Flow Duration Characteristics of Upper Hockanum River at Paper Mill Pond

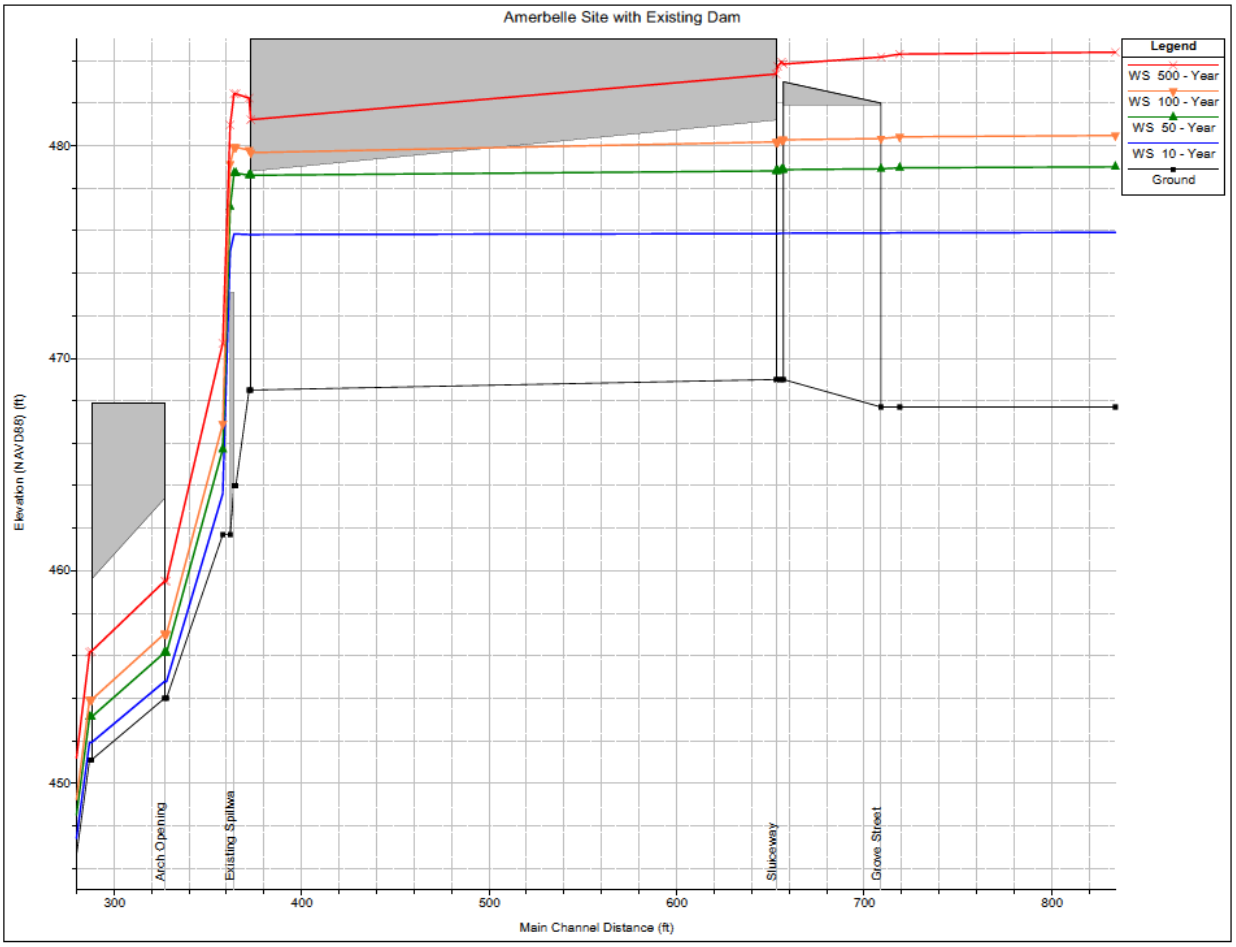


Figure 2 – Estimated Water Surface Profiles Existing Conditions (with existing dam in place)

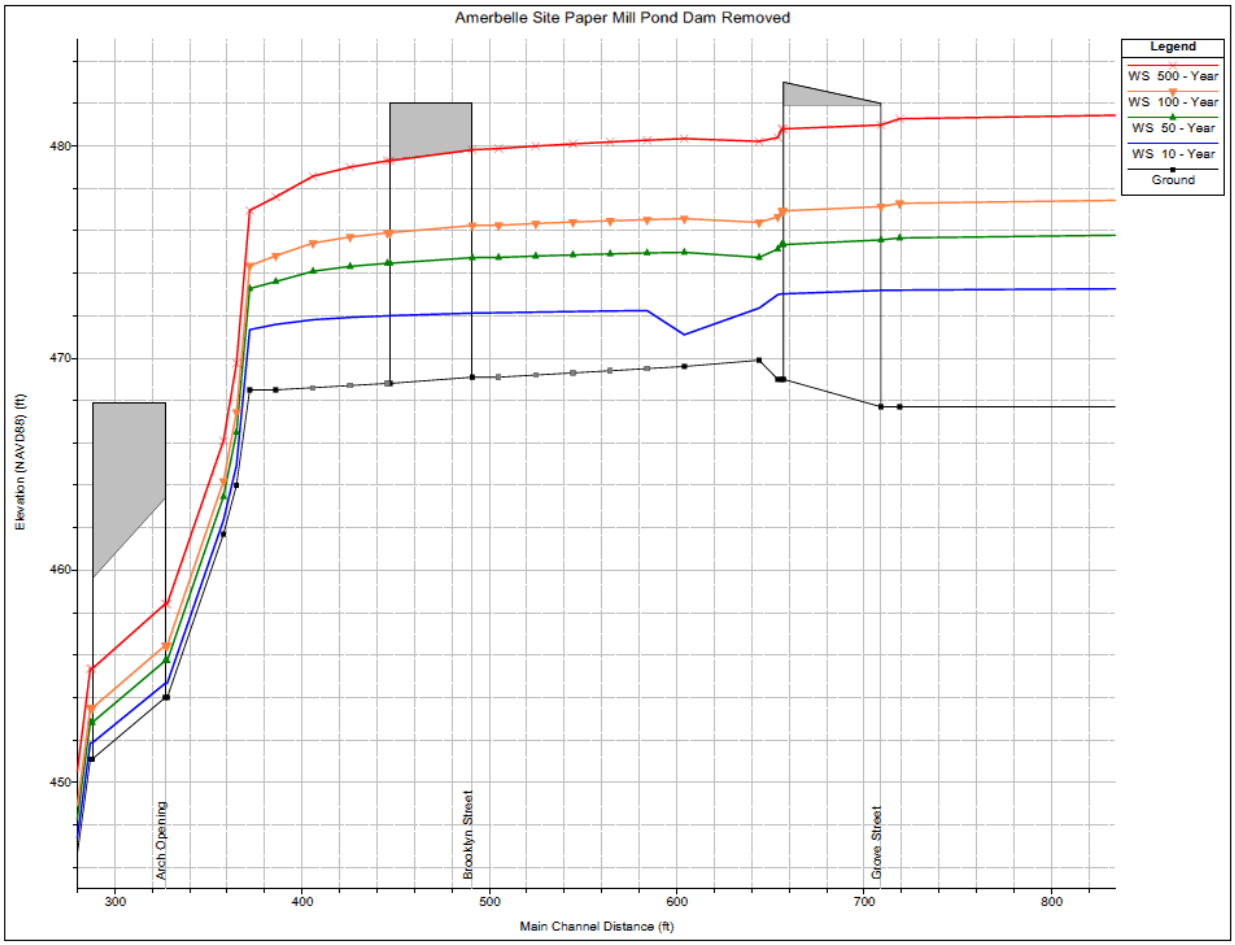


Figure 3 – Estimated Water Surface Profiles with Existing Dam Removed

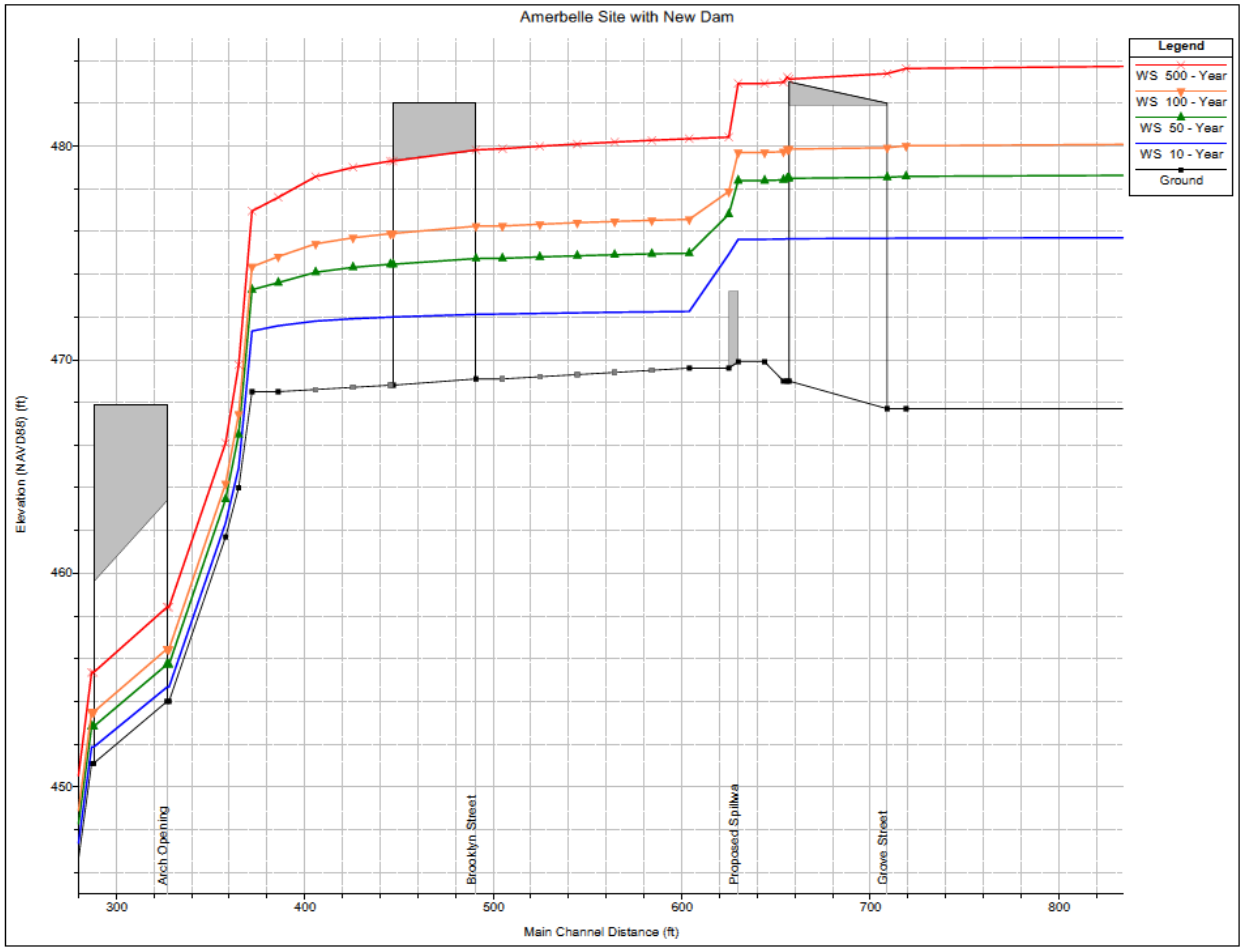
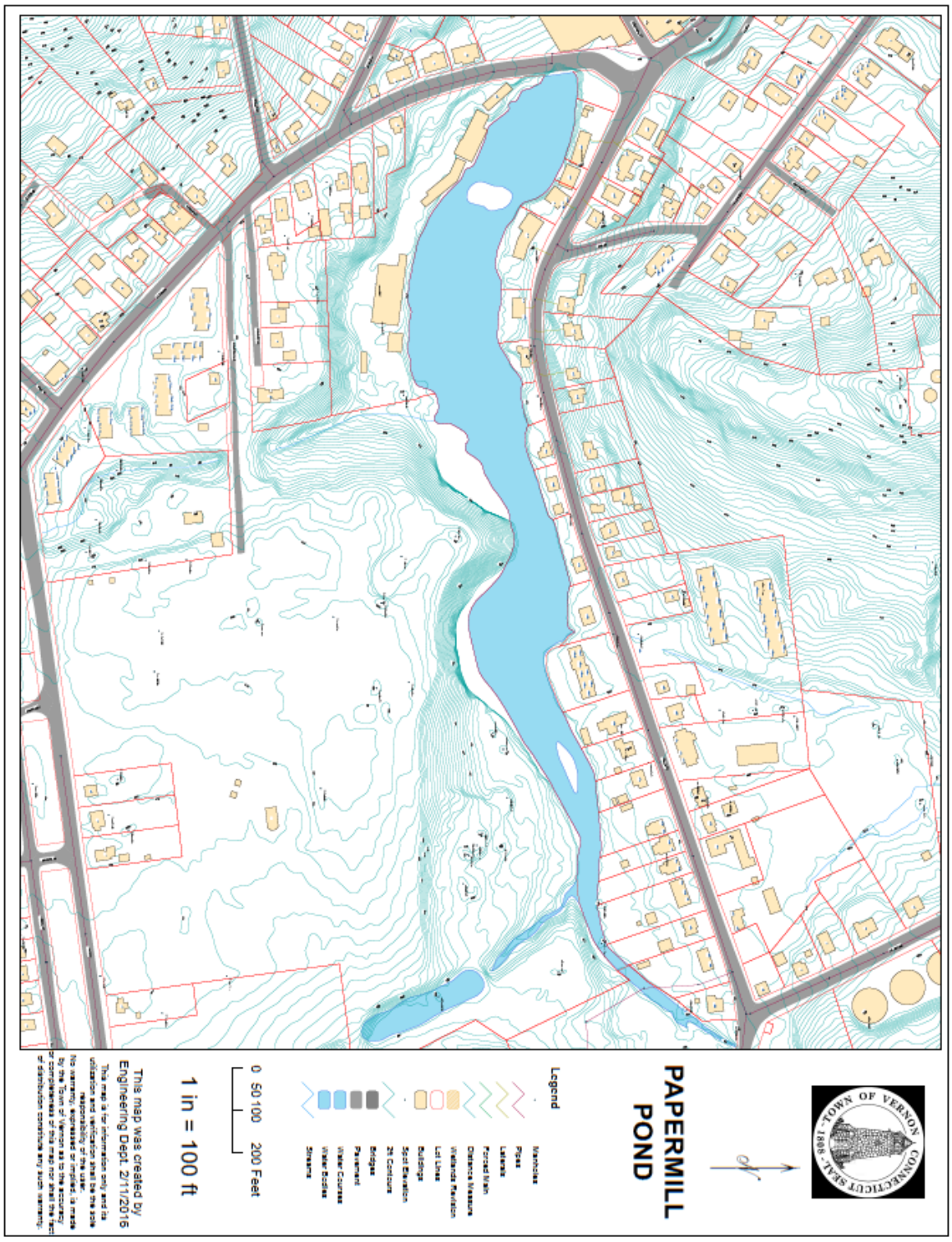


Figure 4 – Estimated Water Surface Profiles with New Dam



Attachment J - 7

Table 2

Monitoring Well Construction Summary and Groundwater Elevation Measurements

Amerbelle Mill

104 East Main Street

Vernon, Connecticut

Well Location	Monitoring Well No.	Installation Date	PVC Elevation (feet)	Borehole Depth (feet)	Depth to Bedrock (feet)	Bedrock Elevation (feet)	Screened Medium	Screen Length (feet)	Screen Interval (feet)	Screened Elevation Interval	Nominal Well Diameter (inches)	Screen Slot Size (inches)	July 27, 2015		August 4, 2015		August 5, 2015		October 2, 2015	
													DTW (feet)	GW Elevation (feet)	DTW (feet)	GW Elevation (feet)	DTW (feet)	GW Elevation (feet)	DTW (feet)	GW Elevation (feet)
Daniel's Mill	**MW-1**	7/22/2015	84.33	32.25	20	64.33	BR	10	22.25-32.25	52.08-62.08	2	0.010	19.87	64.5	19.91	64.4	19.92	64.4	17.98	66.4
	MW-2	7/22/2015	100.86	33.75	20	80.86	BR	10	23.75-33.75	67.11-77.11	2	0.010	32.84	68.0	32.65	68.2	32.66	68.2	32.50	68.4
	American Mill Pond	-	78.3	33.75	20	80.86	BR	-	-	-	-	-	NM	-	NM	-	13.98	95-64.3	13.90	64.4
Amerbelle	**GZ-1**	4/7/15	120.19	18.08	4.22	115.97	BR	10	8.08-18.08	92.11-102.11	2	0.010	NM	-	8.97	111.2	8.98	111.2	9.02	111.2
	GZ-2	4/7 to 4/8/14	121	24.33	5.17	115.83	BR	15	9.33-24.33	84.67-96.67	2	0.010	NM	-	4.53	116.5	8.48	112.5	6.21	114.8
	GZ-3	4/8 to 4/9/15	119.02	20.2	7.19	111.83	BR	10	10.2-20.2	88.82-98.82	2	0.010	NM	-	NM	-	11.94	107.1	11.91	107.1
	GZ-4	4/24/15	103.31	10.54	10.54	92.77	OB	8	2.54-10.54	84.77-92.77	2	0.010	NM	-	NM	-	9.56	93.8	8.65	94.7
	GZ-5	4/24/15	100.55	16.2	16.2	84.35	OB	10	6.2-16.2	74.35-84.35	2	0.010	NM	-	NM	-	Dry At 16.22		Dry At 16.22	
	GZ-6	9/21/15	137.14	32.3	2	135.14	BR	15	17.3-32.3	104.84-119.84	2	0.010	NM	-	NM	-	NM	-	21.62	115.5
	GZ-7	9/22/15	119.93	32	6	113.93	BR	10	21.1-31.1	88.83-98.83	2	0.010	NM	-	NM	-	NM	-	12.49	107.4
	GZ-8	9/23/15	118.06	25	>25	NE	OB	10	7-17	101.06-111.06	2	0.010	NM	-	NM	-	NM	-	9.34	108.7
	GZ-9	9/24/15	103.38	33.7	23.3	80.08	BR	5	28.7-33.7	69.68-74.68	2	0.010	NM	-	NM	-	NM	-	17.49	85.9
	AM-1	1/22/04	115.59	12.5	10.30	105.29	OB	5	7.5-12.5	98.09-103.09	2	Not Reported	NM	-	NM	-	10.52	105.1	10.68	104.9
	AM-7	1/23/04	103.33	11	>11	NE	OB	5	4.5-9.5	88.93-93.83	2	Not Reported	NM	-	NM	-	8.72	94.6	8.23	95.1
	ME-1	11/29/05	122.65	15.8	2.8	119.85	BR	10	4.9-14.9	97.75-107.75	2	0.010	NM	-	5.71	116.9	5.72	116.9	5.81	116.8
	ME-2	11/29/05	121.53	18	5.1	116.43	BR	10	8-18	93.53-103.53	2	0.010	NM	-	7.02	114.5	7.09	114.4	3.19	118.3
	ME-6	11/30/05	100	25.5	13.2	86.80	BR	10	15.5-25.5	64.5-74.5	2	0.010	18.32	81.7	18.31	81.7	18.35	81.7	18.21	81.8
	MW-01	6/26/09	99.68	49.4	13.4	86.28	BR	10	39.4-49.4	40.28-50.28	2	0.010	NM	-	7.49	92.2	7.58	92.1	7.60	92.1
	MW-02	6/29/09	114.06	32.6	18.6	95.46	BR	10	22.6-32.6	71.46-81.46	2	0.010	NM	-	NM	-	19.06	95.0	19.01	95.1
	MW-03	6/29/09	122.25	36.7	23.2	99.05	BR	10	26.7-36.7	75.55-85.55	2	0.010	NM	-	NM	-	10.69	111.6	10.70	111.6

Notes:

1. OB indicates well screen is installed in overburden material.
   BR indicates well screen is installed in bedrock.
2. NE indicates bedrock was not encountered in the test boring.
3. Top of PVC riser pipe elevations were surveyed by GZA relative to a benchmark at ME-6 which was assigned an arbitrary elevation of 100 feet.
4. Measurements are from the top of the PVC riser pipe.
5. Depth to bedrock and screened interval elevations are based on field observations and measurements made during well construction.
6. MW-1, MW-2, and GZ-1 through GZ-5 were installed by GZA, MW-01 to MW-03 was installed by Fuss & O'Neill, ME-1, ME-2 and ME-6 were installed by Metcalf and Eddy and AM-1 and AM-7 were installed by GeoDesign
7. DTW = Depth to Water GW Elevation = Groundwater Elevation

N/F HOWARD A. FROMSON

CEDAR STREET

LAUREL STREET

N/F JOAN B. SIMON

N/F DONALD PL BERGER

GROVE STREET

EAST MAIN STREET

PAPER MILL POND

AMERICAN MILL POND

N/F DANIEL MANAGEMENT INC.

WAREHOUSE

BROOKLYN STREET

SKY WAY

RACEWAY

FORMER COMPACTING DUMPSTER

LOADING DOCK

TEXTILE STORAGE

STAINLESS STEEL WASTEWATER COLLECTION SUMP

DYE MIXING ROOM

JIG DYEING

BEAM DYEING

JET DYEING

30,000-GALLON PROPANE ABOVEGROUND TANK (REMOVED)

(2) 18,000-GALLON ABOVEGROUND OIL TANKS (COVERED/CONTAINED)

10,000-GALLON FORMER AMMONIA (EMPTY)

10,000-GALLON WATER (NOT USED)

15,000-GALLON WATER

FORMER XYLENE USTs (REMOVED)

TEXTILE DYEING BUILDING NO.14

TEXTILE FINISHING

TEXTILE STORAGE AND HANDLING

FINISH CHEMICAL STORAGE

MAINTENANCE MACHINE SHOP

ORGANIC COATING MIXING

ORGANIC COATING STORAGE

NO.1 NO.2 NO.3 NO.4 NO.5 NO.6 NO.7 NO.8 NO.9 NO.11 NO.12 NO.13

GENERAL STORAGE

ABOVEGROUND TANK (NOT USED)

BOILER ROOM

BOILER STACK

FORMER PCB TRANSFORMERS

FORMER TURBINE

PERMITTED COOLING WATER DISCHARGE

SURFACE WATER ELEV. (64.4)

FORMER RACEWAY

SEE FIGURE 2A FOR SOIL VAPOR LOCATIONS IN AOC-18 AND AOC-19

SEE FIGURE 4 FOR GEOLOGIC CROSS SECTION

FORMER GASOLINE STATION

AOC-21

MW-01 (92.1)
MW-02 (95.1)
MW-03 (111.6)
MW-1 (66.4)
MW-2 (68.4)

GZ-1 (111.2)
GZ-2 (114.8)
GZ-4 (94.7)
GZ-5 (81.8)
GZ-6 (115.5)
GZ-7 (107.4)
GZ-8 (108.7)
GZ-9 (85.9)
GZ-13-1/GZ-3 (107.1)
GZ-19-7/GZ-4

ME-1 (116.8)
ME-2 (118.3)
ME-2A
ME-3
ME-5
ME-6 (81.8)

AM-1 (104.9)
AM-2
AM-3
AM-4
AM-5
AM-6
AM-7 (95.1)
AM-8
AM-9
AM-10
AM-11

SB-101
SB-102
SB-103
SB-104
SB-105
SB-106
SB-107
SB-108
SB-109
SB-110
SB-111
SB-112
SB-113
SB-114
SB-115
SB-116
SB-117
SB-118
SB-119
SB-120
SB-121

AOC-1 AOC-1-1 AOC-1-2 AOC-1-3 AOC-1-4 AOC-1-5 AOC-1-6 AOC-1-7 AOC-1-8
AOC-2 AOC-2-1 AOC-2-2 AOC-2-3
AOC-3 AOC-3-1 AOC-3-2
AOC-4 AOC-4-1 AOC-4-2 AOC-4-3 AOC-4-3-A AOC-4-3-B AOC-4-3-C AOC-4-3-D AOC-4-4 AOC-4-5
AOC-5 AOC-5-1 AOC-5-2 AOC-5-3 AOC-5-4 AOC-5-5 AOC-5-6
AOC-6 AOC-6-1 AOC-6-2
AOC-7 AOC-7-1 AOC-7-2
AOC-8
AOC-9
AOC-10
AOC-11
AOC-12
AOC-13 AOC-13-1 AOC-13-2 AOC-13-3
AOC-14
AOC-15 AOC-15-1 AOC-15-2 AOC-15-3
AOC-16 AOC-16-1
AOC-17 AOC-17-1
AOC-18 AOC-18-1 AOC-18-2 AOC-18-3 AOC-18-4 AOC-18-5
AOC-19 AOC-19-1 AOC-19-2 AOC-19-3 AOC-19-4 AOC-19-5 AOC-19-6 AOC-19-7 AOC-19-8 AOC-19-9
AOC-20 AOC-20-1 AOC-20-2 AOC-20-2/2A AOC-20-3
AOC-25

LOADING DOCK

0 15 30 60 90
SCALE IN FEET

LEGEND

- OVERHEAD DOOR
- AOC-1 — AREA OF CONCERN
- GZA SOIL BORING
- GZA SOIL VAPOR SAMPLE
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- SOIL BORING BY OTHERS
- DESTROYED MONITORING WELL
- (115.5) — GROUNDWATER ELEVATION (FEET) AS OF 10/2/2015
- 115 — GROUNDWATER CONTOUR

NOTE:

AOCs NOT SHOWN ON PLAN ARE SITE-WIDE AOCs
AOC-22 SITE-WIDE FILL
AOC-23 SITE-WIDE GROUNDWATER

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM A PDF OF A FIGURE PROVIDED BY FUSS & O'NEILL ENTITLED "PROPOSED AND EXISTING SAMPLING LOCATIONS, AMERBELLE TEXTILES", DATED AUGUST 2009, ORIGINAL SCALE: 1"=40'. FIGURE 2. ALL SITE FEATURE LOCATIONS ARE APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

TOWN OF VERNON
VERNON, CONNECTICUT

BEDROCK GROUNDWATER CONTOURS AS OF (OCTOBER 2, 2015)

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:

PROJ MGR: CJF	REVIEWED BY: GTB	CHECKED BY:	FIGURE 2
DESIGNED BY: AJT	DRAWN BY: MJS	SCALE: 1"=30'	
DATE: 10-16-2015	PROJECT NO. 05.0045441.00	REVISION NO.	SHEET NO.